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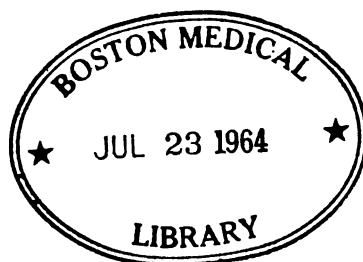
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ILLUSTRATED SKIN DISEASES

AN ATLAS AND TEXT-BOOK

WITH SPECIAL REFERENCE TO MODERN DIAGNOSIS AND THE MOST APPROVED
METHODS OF TREATMENT

BY
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SECOND EDITION, REVISED AND ENLARGED

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PREFACE TO SECOND EDITION.

IN the attempt to make a general survey of a branch of medicine so young and so rapidly growing as Dermatology there are difficulties that do not occur in older and more thoroughly explored fields. In cutaneous medicine the description and differentiation of new maladies, and the correlation and grouping of older ones, are still in progress; and the limitations and boundaries of its various subdivisions are still matters of discussion. Classification, upon whatever basis it may be made, is necessarily imperfect, for both the etiology and the pathology of many dermal maladies are still unsettled. Even the nomenclature presents difficulties of its own. In some cases dissimilar diseases are known by similar names, and in others the designations of a single malady are varied and confusing.

In the following pages the field of dermal disease has been covered only so far as it is necessarily of interest to every practitioner of medicine. The nomenclature employed is that in common use. The classification that is followed is the simple pathological one recommended by Jessner, which seems to be as good as any one at our disposal to-day. Especial stress is laid upon the Symptomatology, Diagnosis, and Treatment of the various diseases, while the less practical considerations of Etiology and Pathology are condensed and cursorily considered. Questions that are still matters of dispute in Dermatology have been, as far as possible, avoided. No attempt has been made in the therapeutic sections to mention all the measures and plans of treatment that have been found useful in the various diseases. The standard modern methods, and more especially those that the author has himself found useful, have been recommended. It is hoped that the simplified and systematized arrangement of the prescriptions will be found useful.

Pictorial representation, a recognized aid to the practitioner in every department of medicine, is of preëminent importance in Dermatology. Most of the symptoms are objective and visual, and the diagnosis must generally be made by the eyesight alone. It is difficult to represent in words the manifold impressions and the delicate

variations that are so readily appreciated through the optic nerve. Many attempts have been made to depict on paper and permanently preserve the evanescent features of dermal disease. Photography and its dependent processes are the most suitable means for that purpose ; for the artist's brush necessarily reflects his own individuality, and his work is influenced by factors so many and various as to make it unsuitable for reproduction in quantity. Colored illustrations have been introduced in this atlas in all cases in which they have seemed to be necessary or advisable ; but in the many instances in which color is of no importance for the recognition of disease, illustrations in black and white have been supplied.

The pictures, both plate and text, have been selected with the view of exhibiting, as far as possible, the ordinary phases of skin disease as met with in practice. Most of them are from photographs of his own patients made by the author. Those that are not are credited to the physicians from whom they came. A few are taken from foreign sources. The anatomical illustrations are from photomicrographs.

In this second edition the section on Cosmetics of the Skin and Hair has been entirely rewritten and very greatly enlarged ; for the author believes that it is the neglect of this field which has permitted it to fall to so large an extent into improper and non-medical hands. The number of prescriptions has been considerably increased ; and the various changes which the improvement of our knowledge of the nature, pathology, and treatment of certain dermatoses render necessary have been made.

The author desires to express his thanks to Drs. T. E. Oertel and William Beurman for assistance in the preparation of the plates, and to Dr. J. F. Aitken for his hearty good will and help in the collection of material. He also desires to thank Professor Elsenberg of Warsaw, Poland, Drs. Salvador Garciadiego of Guadalajara, Mexico, A. H. Ohmann-Dumesnil of St. Louis, A. Ravogli of Cincinnati, Ludwig Weiss, F. B. Carpenter, Robert Abrahams, Henry Roth, and Louis Fischer, of New York City, for the photographs and cases that they have placed at his disposal.

WILLIAM S. GOTTHEIL.

January 1, 1902.

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DIAGRAMMATIC SECTION OF THE SKIN
PLATE I

ANATOMY OF THE SKIN.

THE skin is an elastic and flexible membrane covering the entire body. Its structure is complex, and varies in different parts. Certain elements are present everywhere, and are essential portions of the organ; such are the epidermis, the corium, and the subcutaneous connective tissue. Others are found only in certain regions, and are called appendages; as the hairs, the sweat and the sebaceous glands, and the nails. It contains also blood-vessels, lymphatics, and nerve-structures.

Its appearance varies in different individuals and on different portions of the body. Its texture in places feels smooth and velvety, as on the forehead and on the lumbar regions; in others, as on the outer surface of the thighs, it is rough and uneven. Its color depends on the amount of blood contained in the surface vessels, and on the pigment deposited in the epidermic layers. This latter varies in the different races, and is always more abundant around the nipples and on the genitalia. It is marked by deep furrows over the various joints, while secondary furrows further subdivide it into minute angular fields. At the junction of the angles of these fields are the pores, minute openings which mark the mouths of the hair-follicles and the sebaceous glands. Distinct ridges, corresponding to the regularly arranged papillæ of the cutis, are found on the palms and soles.

The skin is thickest on the back, buttocks, palms, and soles, and thinnest on the eyelids and the prepuce. It is in general more or less movable on the subjacent parts; but in some places, as over the sternum and on the glans penis, it is more closely attached to the tissues beneath. Its entire surface is covered with hair; with ordinary long hair on the hairy parts, and with the fine down known as lanugo hair on the so-called smooth parts; only the palms and soles, the dorsal surfaces of the third phalanges of the fingers and toes, the glans penis, and the inner surface of the prepuce being hairless.

Finally, at the larger openings of the body the skin is directly continuous with the mucous membranes lining the cavities into which they lead.

We distinguish three layers in the skin: 1. The epidermis or scarf-skin, the outermost layer; 2. The corium, derma, or true skin, containing the glandular, muscu-

lar, vascular, and nervous structures; 3. The subcutis or subcutaneous connective tissue, containing the fat, the panniculus adiposus.

We have also to consider the following special structures and appendages: 4. The blood-vessels; 5. The lymphatics; 6. The muscles; 7. The nerves, with the Pacinian bodies and the tactile corpuscles; 8. The pigment; 9. The sebaceous glands; 10. The sweat-glands; 11. The hair; 12. The nails.

1. THE EPIDERMIS.

The epidermis, cuticle, or scarf-skin is composed of layers of stratified epithelium-cells united together by a small amount of cement substance, and contains neither vessels nor nerves. Its upper surface is smooth, save for the markings above



FIG. 1.—Epidermis, corium, and subcutaneous tissue: section of skin of negro.
Photomicrograph, x 21. From the author's collection.

mentioned; but its lower surface is studded with club-shaped processes that fit into the interpapillary spaces of the corium. It passes down into the hair-sacs, forming a portion of the root-sheaths, and it is continuous with the lining mem-

branes of the sweat and sebaceous glands. Its average diameter is from $\frac{1}{8}$ to $\frac{1}{4}$ mm.; but it varies greatly, being especially thick on the palms and soles, and very thin on the lips and the genitals. It is being constantly desquamated; and it is regenerated as constantly by the growth of new cells from the deeper strata of its own substance.

It is composed of three layers, being, from without inward:

1. The stratum corneum or horny layer. This is the outer protecting layer, and is formed of flattened, dried-out epithelial cells, structureless and without nuclei. The inner layers are somewhat rounder and more succulent, but the outermost ones are merely dried scales. In the palms and soles the deepest cells of this layer appear brighter than the rest, and have been called the stratum lucidum (Oehl).

2. The stratum granulosum or nuclear layer. This is composed of from two to five rows of granular refractive epithelial cells, with soft protoplasm and round nuclei. They owe their appearance to the numerous highly refractive granules that they contain, composed of a substance called keratohyalin by Waldeyer, which is of importance in the process of cornification.

3. The rete Malpighii, rete mucosum, stratum spinosum, or prickle-cell layer, consisting of polygonal cells joined to one another by fine hair-like protoplasmic processes. The upper rows of cells of this layer are flattened, but the lower ones are cylindrical, and rest upon the papillæ of the corium.

2. THE CORIUM.

The corium or true skin is the most important part of the cutaneous organ. It is composed of a dense network of interlaced connective-tissue fibers, together with others of the yellow elastic variety. Comparatively thin in children, in the adult it is 2 mm. or more in diameter; but it varies much in thickness in different parts of the body. Exposure to the weather or other irritants causes increase of its volume, and in the negro race it is naturally of exceptional thickness. It contains vessels, nerves, lymphatics, and bundles of smooth muscular fibers, and it is penetrated by the hairs and their sheaths, and the ducts of the glands. We distinguish in the corium a papillary and a reticular layer.

The papillary layer or papillary body is the outer portion of the corium, and lies in contact with the rete Malpighii of the epidermis. Its surface is closely studded with nipple-shaped projections or papillæ. Upon these, and dipping down into the spaces between them, lie the cells of the lowest layer of the epidermis. The papillæ themselves vary much in shape and size, but their average height is $\frac{1}{8}$ mm. They are most marked on the palms and soles, but most abundant on the genitalia. They contain the blood- and lymph-vessels—the vascular papillæ; and the nerve-structures—the sensory papillæ.

The reticular layer lies under the papillary layer, is directly continuous with it, and is distinguishable from it only by the more regular arrangement of the connective-tissue bundles of which it is formed. These are so interlaced as to form rhombic figures, the long axes of which usually run transversely to the axis of the part covered. Curling around the bundles are the yellow elastic fibers. The elasticity of the skin is due to this peculiar arrangement. The lowest fibers of this layer are directly continuous with the connective tissue of the subcutis.

3. THE SUBCUTIS.

The subcutaneous tissue lies under the corium, and is composed of connective tissue containing many elastic fibers and forming large loose meshes. Through this there run irregular bands and masses of more condensed connective tissue that unite the subcutis to the fasciæ and other underlying tissues; and on the closeness of this connection depends the movability of the skin. Larger and smaller collections of fat-cells are found in the meshes. The subcutis contains also large blood-vessels, lymphatics, nervous structures, sweat-glands, and the lower part of the deeper-seated hair-follicles.

Where the fat in the meshes of the subcutis is collected in larger amount, the structure is known as the panniculus adiposus. This consists of masses of round or polyhedral fat-cells, closely packed in a connective-tissue network. It is most abundant in the skin of the palms and soles, the buttocks, and the female breast, but is absent in that of the ear and nose, where the skin is thin and fixed, and in that of the scrotum, where it is very muscular and movable.

4. THE BLOOD-VESSELS.

The epidermis has no blood-vessels, but in the corium and the subcutis they are very numerous. They form two distinct horizontally placed plexuses, one in the corium just beneath the papillary layer, and the other at the boundary line between corium and subcutis. This latter supplies the hair papillæ, the sweat-glands, and the fat masses; the former sends branches to the papillæ of the cutis. The veins follow the arteries, and form a similar plexus between the corium and the subcutis.

5. THE LYMPHATICS.

True lymphatic vessels are not common in the skin, though some are found in the papillæ, and form a plexus at their base. The subcutis also contains some large lymph-vessels. Lymphatic spaces are, however, very numerous indeed; they form a dense network in the corium, especially in the neighborhood of the fat collections and the muscles. These spaces originate in the lower epithelial layers, beginning in the interspinal spaces between the prickle-cells.

6. THE MUSCLES.

The intrinsic muscles of the skin are all of the smooth involuntary kind. There are two varieties of them :

1. The *arrectores pilorum*. These are small bundles of smooth muscular fibers running diagonally from the connective tissue of the papillary bodies to the base of

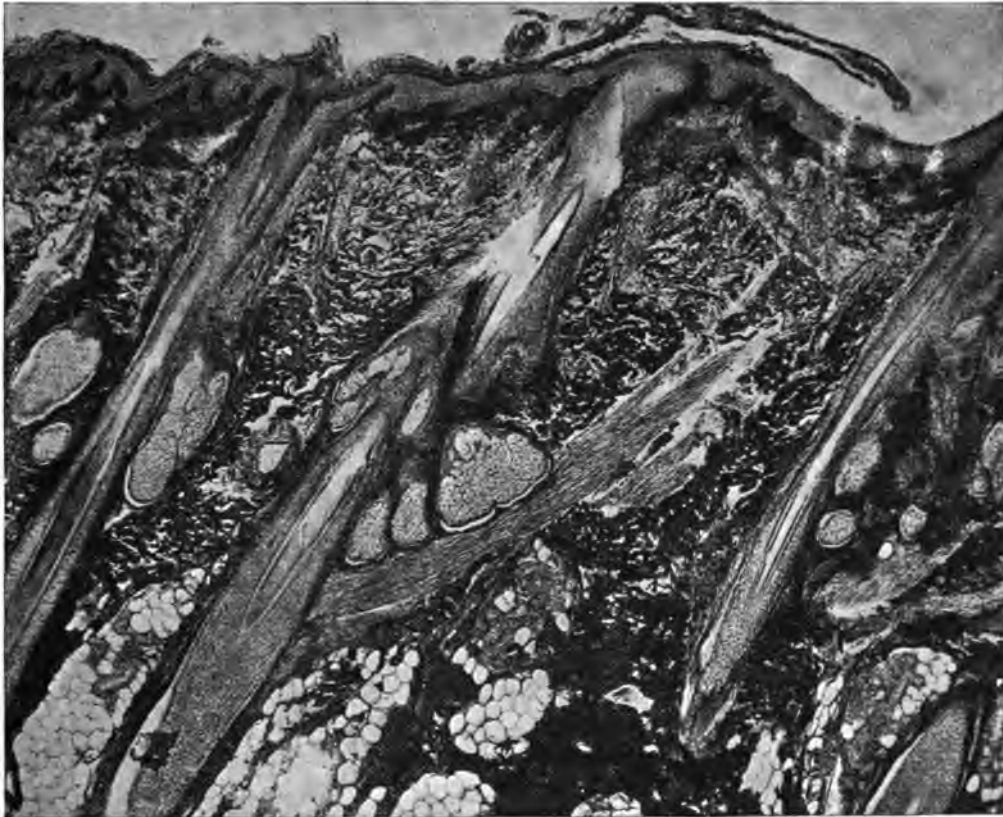


FIG. 2.—Arrector pilorum, hair-sacs, etc. : section of scalp.
Photomicrograph, x 35. From author's collection.

the hair-sacs, to which they are attached by elastic threads. Their contraction erects the hair, empties the blood and lymphatic vessels, causes pallor of the skin, and finally expresses the contents of the sebaceous glands. Cilia and vibrissæ have no arrectores.

2. Larger masses of smooth muscular fibers arranged in layers are found in certain places, notably in the skin of the scrotum, penis, around the mamilla, and in the eyelid.

7. THE NERVES.

The skin contains both medullated and non-medullated nerve-fibers. The medullated fibers are branches of the deeper subcutaneous nerves, and go to the

Pacinian bodies, the tactile corpuscles, and the end-bulbs. The non-medullated fibers form a network in the papillary layer, and send up branches which form the subepithelial plexus; from this there ascends a congeries of minute twigs that end in or among the prickle-cells of the rete.

The Pacinian bodies or corpuscles of Vater are ellipsoid whitish bodies, 2–4 mm. in size, attached to the nerves like berries on their stems. They are found espe-



FIG. 3.—Pacinian corpuscles, lymph-spaces, panniculus adiposus, etc.: section of skin of finger-tip. Photomicrograph, $\times 21$. From the author's collection.

cially in the subcutis of the palms and soles, fingers and toes. A single medullated nerve enters each one at its lower extremity, loses its sheath, and passes to the center of the body as a naked axis-cylinder. In the upper part of the Pacinian body it terminates in an irregular enlargement or in pointed processes. Round this central fiber lies the core, composed of connective-tissue corpuscles; and around this again is the thick capsular envelop that forms the mass of the Pacinian body. This latter consists of a number of layers of concentric fibers, each one composed of a hyaline elastic ground substance, connective-tissue fibers, and an inner layer of endothelial cells.

The tactile corpuscles, known also as the corpuscles of Meissner or Wagner, are

rounded or oval bodies, $\frac{1}{10}$ mm. in size, lying in the sensory papillæ of the corium. They consist of a mass of connective tissue, round which there winds a medullated nerve; the axis-cylinder enters the corpuscle and is lost. They are found in the regions where sensation is keenest, and especially in the skin of the last phalanges of the fingers.



FIG. 4.—Pacinian corpuscles, nerve-trunks, artery, etc.: section of skin of finger-tip. Photomicrograph, $\times 35$. From the author's collection.

The end-bulbs of Krause are rounded bodies, consisting of a mass of cells in a delicate connective-tissue envelopè. The nerve-fiber penetrates the bulb, and ends in one or more clubbed extremities. The end-bulbs are found more especially in the tongue, the lips and gums, the glans penis, and the clitoris.

8. THE PIGMENT.

Pigment is found in the adult only in the epidermis, its presence in the corium being always pathological. In the white races it is situated only in the deepest layers of the rete Malpighii; in the colored races it pervades all the cells up to the granular layer. It consists of granular pigment derived from the blood, and placed chiefly around the nuclei of the cells. It is more abundant in parts that are exposed to the light, in consequence of the action of the ultra-violet chemical rays.

9. THE SEBACEOUS GLANDS.

These are small racemose glands, situated in the corium and subcutis, and generally connected with the hairs. From 2 to 6 mm. in size, a number of them are attached to each hair, into the upper portion of whose sacs their ducts open. They are most abundant where the hair-follicles are most numerous, and they are absent where there are no hairs, as on the palms and soles and the glans penis. They are largest on the nose, scrotum, mons veneris, labia majora, and anus. They appear as appendages of the ordinary coarse hair; but the lanugo hair-sacs are apparently diverticula in the wall of the excretory duct of the sebaceous glands.

They consist of a framework composed of connective tissue and containing the vessels, nerves, and lymphatics. This is lined with a large nucleated epithelium, which is prolonged into the excretory duct of the gland, being continuous with the

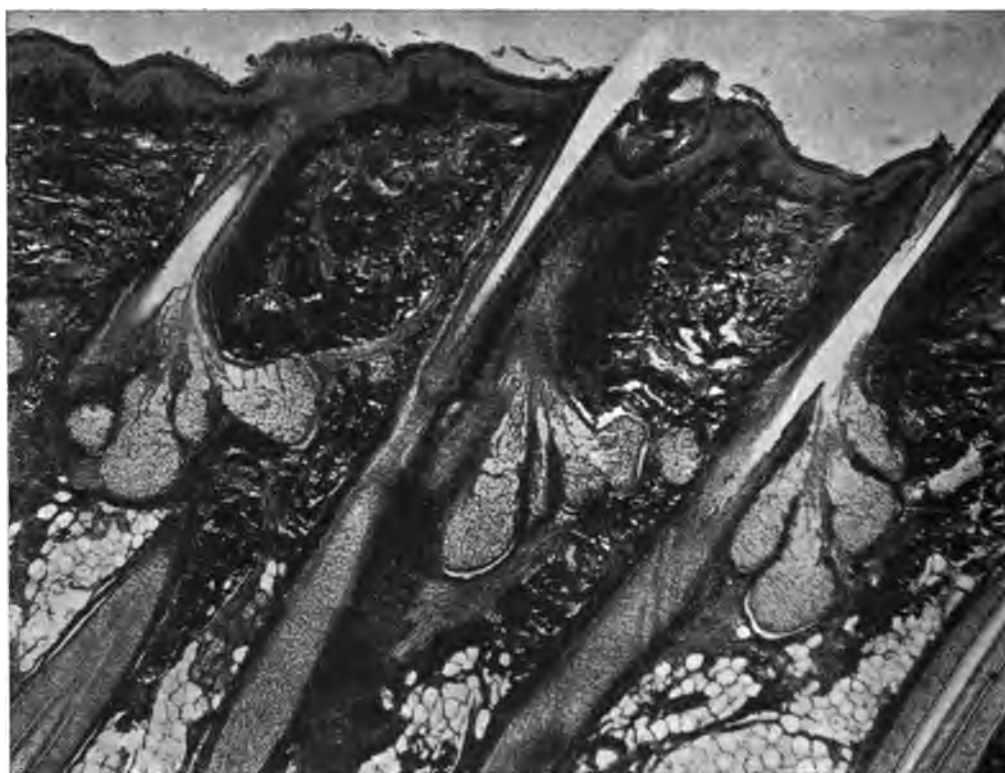


FIG. 5.—Sebaceous glands: section of skin of scalp.
Photomicrograph, $\times 35$. From the author's collection.

external root-sheath of the hair, and therefore derived from the rete. Inside this lining membrane lies a mass of fatty epithelium-cells and detritus.

The sebum is a semi-liquid oleaginous material, destined to lubricate the hairs.

It consists of fifty per cent. of fatty matter, olein, cholesterin, etc., together with the remnants and detritus of the epithelium-cells.

Certain special sebaceous glands are not connected with the hairs; they are:

1. The Meibomian glands, large glands situated at the free margin of the lids.
2. Tyson's glands in the glans penis and prepuce.
3. The sebaceous glands of the labia minora.

10. THE SWEAT-GLANDS.

The sweat, sudoriparous, or coil glands are simple tubular glands coiled up into a ball, and situated deep in the reticular portion of the corium and in the subcutis

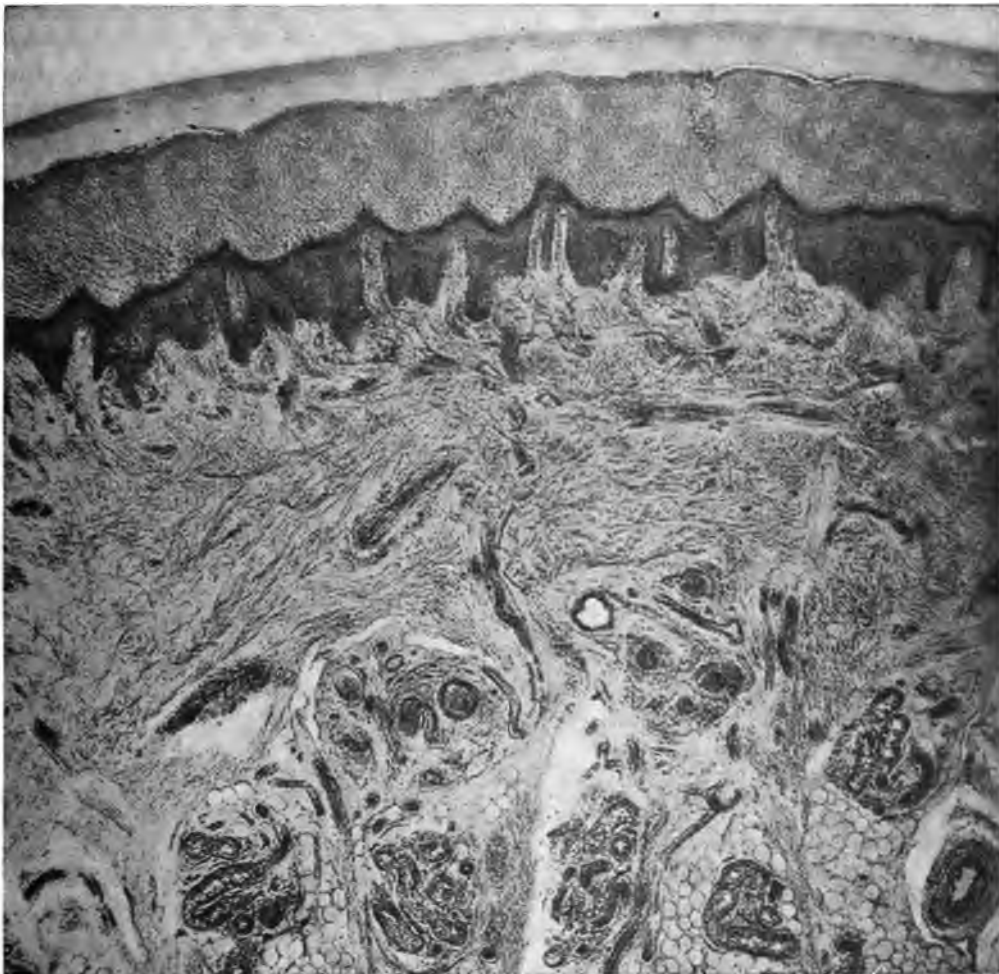


FIG. 6.—Sweat-glands and ducts: section of skin of palm.
Photomicrograph, x 42. From the author's collection.

They are small, round, yellow bodies $\frac{1}{2}$ -3 mm. in size, and are found everywhere save on the glans penis and the margins of the lips. They are most developed and abundant on the palms and soles, being sometimes large enough to be seen with the naked eye, and numbering between two and three thousand to the square inch. They are numerous and large also in the axilla and around the anus. Their total number is estimated at from two to three millions. Each tube, uncoiled, measures about 3 mm. in size. The coils end in excretory ducts that pass straight upward through the corium, and open at funnel-shaped depressions on the surface known as pores.

Each coiled tube consists of a connective-tissue framework or *membrana propria*, with some smooth muscular fibers, and lined with a cuboidal epithelium. The excretory duct is also lined with cuboidal epithelium; it ends at the prickle-cell layer of the epidermis, and thence onward to the surface the duct is a simple corkscrew-like passageway, without special cellular lining.

The secretion of the coil glands is partly sweat, and partly an oily material that serves to lubricate the skin. An abundant vascular supply surrounds each coil. The sweat itself is a watery fluid that differs somewhat in composition in different individuals and in different parts of the same body. It has a saline taste and an alkaline reaction. It is composed almost entirely of water, containing less than two per cent. of solid matter. This latter is mostly sodium and potassium salts, urea, neutral fats, and cholesterin.

11. THE HAIR.

The hairs are columnar epithelial formations, the lower parts of which are embedded in the corium and subcutis, while the upper portions project upward through the epidermis and above the surface of the skin. They are found all over the body, except on the palms and soles, the vermilion border of the lips, the backs of the distal phalanges, the glans penis and the inner surface of the prepuce, the labia minora and the inner surface of the labia majora. We recognize two varieties: the true hairs, found on the scalp, eyebrows, eyelashes, beard, axillæ, genitals, and the anus of the male; and the lanugo hair, the soft down found on the face, the trunk, etc.; they differ from one another only in point of size.

Hairs are generally implanted obliquely in the skin in consequence of the arrangement of the connective-tissue bundles of the corium, in which their roots lie; but the hairs of the external auditory and the nasal passages, as well as those of the lips, are implanted straight. In certain races, as the Hottentots, for example, all the hairs have a straight implantation.

Hairs are both elastic and strong, being capable of great extension and able to bear heavy weights. They grow to a certain length, which varies with different individuals and is different in different locations, and then stop and fall out; the

rate of growth being about half an inch a month. The life of an individual hair is from two to five years; of an eyelash, one hundred to one hundred and fifty days. Warmth and frequent cutting promote their growth. They are among the most enduring portions of the body, as is shown by the well-preserved hair of many of the mummies.

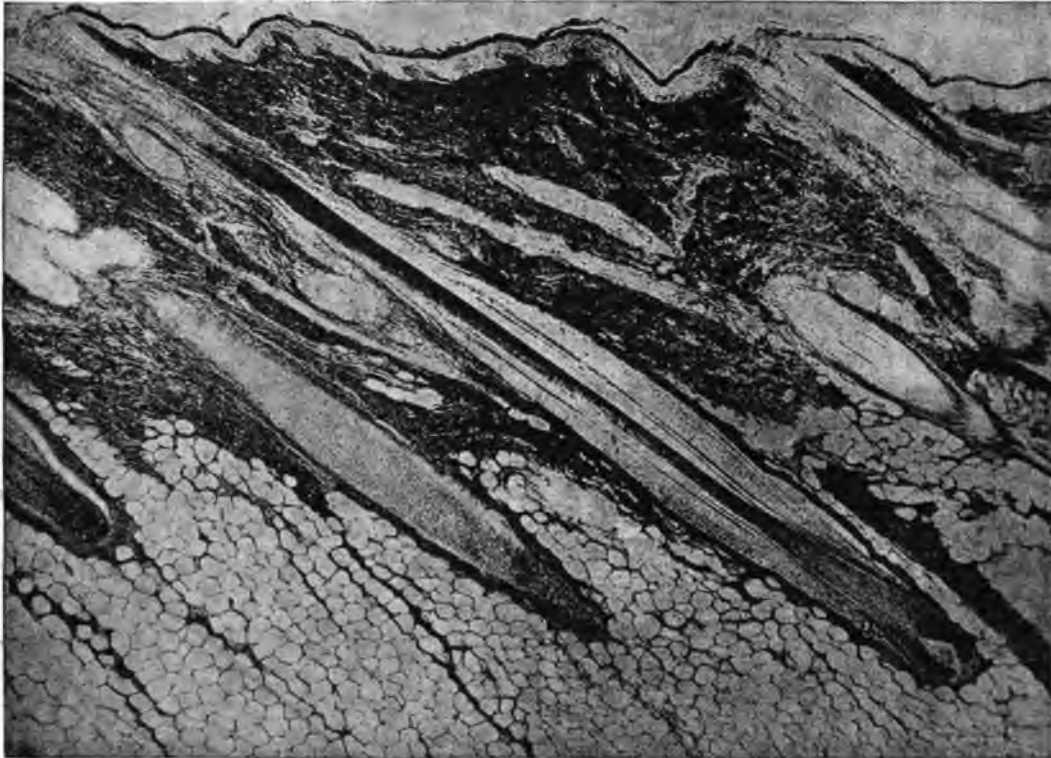


FIG. 7.—Hair and hair-follicle: section of skin of scalp.
Photomicrograph, $\times 35$. From the author's collection.

We distinguish as belonging to the hair: 1. A shaft, being that portion which projects above the surface of the skin; 2. A root, situated in the corium and the subcutaneous connective tissue, and ending in a knobbed extremity; 3. A follicle, being the involution of the dermic layers in which the hair is placed.

1. The shaft or scapus is a long and usually straight column, tapering at its free extremity. It consists of a central portion, the medulla or marrow, composed of polyhedral cells containing fat and free pigment granules. It is often absent, especially at the extremities of the hair, and is not found in the lanugo hair. The mass of the hair, however, is made up of the cortical substance, consisting of elongated, flattened epithelial cells, arranged with their long axes parallel to the long

axes of the hairs. These cells are more or less fused together, and contain granular pigment. Outside of this is the cuticle, a delicate membrane investing the hair substance and binding its bundles closely together. It consists of flat, cornified epithelial cells without nuclei, overlapping one another like shingles on a roof.



FIG. 8.—Hair-shaft and root.
Photomicrograph, $\times 240$. From the author's collection.

2. The root or radix is thicker than the shaft, and ends in an expansion known as the hair-bulb. In the bottom of the bulb is a cup-shaped depression which rests upon the papilla at the base of the follicle. In its structure the root is essentially

the same as the shaft; but the cortical substance is loose and spongy, and consists of cells closely resembling those of the rete mucosum.

3. The follicle or hair-sac is a bag-like inversion of the corium. It is cylindrical, with a narrow mouth on the surface of the skin, and a larger rounded extremity

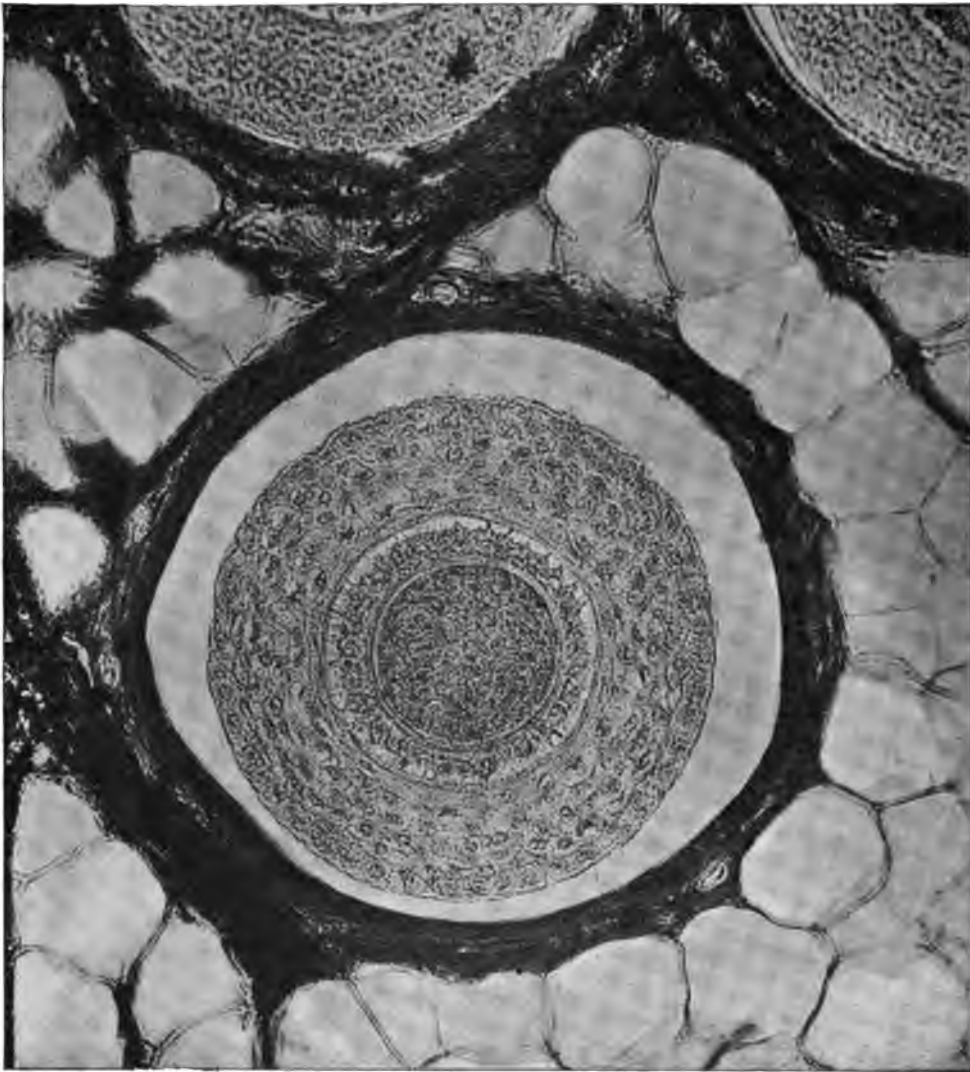
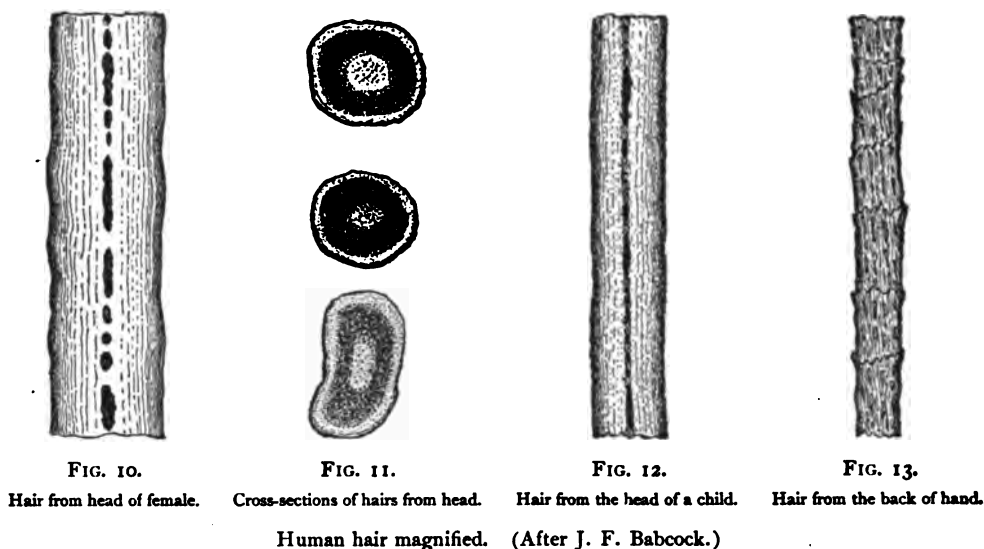


FIG. 9.—Transverse section of hair and sac.
Photomicrograph. From the author's collection.

that lies in the corium or subcutis. It is essentially a continuation of the papillary layer of the corium. A little below the level of the corium is a constriction known as the neck, and here the ducts of the sebaceous glands open into the follicle. The

follicles vary much in size in different localities, but in general they are from 2 to 6 mm. in length. They consist of a connective tissue, in which several layers may be recognized. The external layers are similar to the loose connective tissue in which the sac is situated. The outermost layer is hyaline and transparent, and is known as the vitreous follicle-sheath. At the base of the follicle rises the papilla, a small club-shaped projection about $\frac{1}{10}$ mm. in size, which fits into the hollow at the bottom of the hair-bulb. It is simply a modified papilla of the corium, and it contains the vessels that nourish the hair, as well as non-medullated nerve-fibers. The growth and regeneration of the hair takes place from the papilla; new elements are formed there which elongate and move up, pushing the hair before them. New hairs grow from the old papillæ when the former are pulled out or lost.



Between the follicle and the root of the hair are two further coats, known as root-sheaths. The external root-sheath lies next to the vitreous follicle-sheath, and is a continuation of the general rete mucosum, consisting of the same stratified epithelial cells. The internal root-sheath lies inside the preceding, surrounding the root of the hair closely. It consists of cylindrical epithelial cells, and is divided into the sheath of Huxley and the sheath of Henle.

The pigment of the hair depends on the color of the corneous cells of the cortical substance, and on the air the medulla contains. The basis color is blond to red; pigment in granules and diffused gives the shades from brown to black. Soap, alkalis, and especially the peroxide of hydrogen destroy the pigment; the presence of much air in the cortical substance renders the hair white.

The cilia or lashes, the vibrissæ of the nostrils, and the hairs of the external

auditory passages differ from the ordinary true hairs in their implantation, which is straight, and in the fact that they have no arrector muscles connected with their sebaceous glands. Though they are thick hairs, they remain short.

12. THE NAILS.

The nails are epidermoidal structures found on the dorsal surfaces of the distal extremities of the fingers and toes. They form quadrilateral plates, curved slightly in their long diameters, and lying with their convex surface upward. Their anterior portion ends in a sharp border that overhangs the end of the last phalanx; their posterior extremities and sides are embedded in a fold of skin. Their surface is smooth and glistening, and marked with longitudinal striæ. They consist of cornified epithelial cells arranged in layers, similar to those of the ordinary epidermis, but fused more firmly together. This epithelium lies upon a corium that possesses certain peculiarities. Larger and smaller air-vesicles in the intercellular spaces and inside the lamellæ cause the white spots so frequently observed in the nails.



FIG. 14.—Transverse section of third phalanx. (After Toldt.)

a, nail; *b*, epithelium of nail-bed; *c*, nail-bed; *d*, falx; *e*, bone of phalanx.

The nail is divided into two distinct areas by a curved line near its posterior extremity, running parallel to the free border of the nail, and known as the lunula. The anterior area, of a pink color, rests upon the nail-bed, which is a corium covered with a stratified epithelium, and represents the rete. This corium possesses no papillæ, but its connective-tissue bundles are arranged in longitudinal bands containing the blood-vessels and the nerves. The ridges thus formed fit into corresponding depressions in the epithelium of the under surface of the nail itself. The posterior smaller portion is whiter, on account of the many light-refracting transitional epithelial cells that it contains. The corium under it is studded with papillæ, like those of ordinary skin, and is known as the matrix. The posterior extremity

of the nail is embedded in a fold of the skin, the nail-groove or falx. Here the stratum mucosum of the skin gradually passes into the epithelium of the matrix. At the lunula there is a decreased transparency of the nail, due to the presence of a broad layer of actively proliferating cells.

The nail grows from the matrix, and its thickness is dependent on the breadth of that structure. The rate of growth is stated by Quain to be about $\frac{1}{32}$ of an inch per week. The uppermost layers of the epithelial cells that compose it grow from the portion furthest back, while the lower cells are the product of the more anterior portion. Growth is continuous from behind forward. The nails are nourished from the subepithelial plexus of the corium of the bed, matrix, and nail-fold. They grow more rapidly in children than in adults, and in summer than in winter time. Under ordinary circumstances their growth is largely in excess of the wear to which they are subjected; but there is a limit to it, and they cease to extend after a certain length is attained, ending in a narrowed, bent extremity. In some instances a length is attained of $1\frac{1}{2}$ to 2 inches, and the nail is then crooked or curved upon itself.

PHYSIOLOGY OF THE SKIN.

THE skin is an organ of great size and complexity, with functions of vital importance in the body economy; and any very extensive or permanent interference with them is deleterious to health, and may lead to death. The destruction of any very large portion of its area is fatal. The functions of the skin are varied, and are both general and special. General functions are its actions as a protecting envelop for the various other parts of the body, and its regulation of the body heat. Special functions are its activities as a breathing organ, as a secreting and excreting organ, and as an organ of sense. We shall consider them in their order.

1. The skin as a protecting organ. The corium is elastic, from the large quantity of yellow elastic connective tissue that it contains, and, with the thick panniculus adiposus, protects the various organs of the body from the effects of external violence. This protection is limited, however, and the skin can be ruptured by external pressure or traumatism, or by internal distention, as in pregnancy, œdema, or tumors. Such ruptures tend to have a definite configuration, varying in different parts of the skin, and depending upon the general arrangement of the connective-tissue bundles of the corium. The epidermis itself is a bad conductor of heat, and protects the deeper parts in some measure from the effects of heat and cold. It also prevents the too free evaporation of fluids from the body. The cholesterol fats that are formed in the cornifying surface epithelial cells act as a check to progress of microbic life on the surface, since they do not, like the glycerin fats, form good culture media for them.

2. The skin as a regulator of the body heat. The skin performs this function automatically, and by its means the body is enabled to withstand external temperatures that may vary rapidly and in fairly wide limits. When the temperature of the environment rises the muscles of the skin relax, the vessels of the papillary plexus become turgid with blood, and the surface becomes hot and red. Increased loss of heat by radiation occurs; and the congestion of the vessels around the coil glands causes an increased production of sweat, the evaporation of which takes further heat from the skin. When the temperature falls the reverse occurs. The skin muscles

contract under the influence of the cold, causing by the traction that they exert the erection of the obliquely implanted hairs, and giving rise to the condition known as goose-flesh or *cutis anserina*. The papillary vessels contract, the surface gets pale and cold, and the loss of heat by radiation and by the evaporation of sweat is reduced to a minimum

3. The skin as a breathing organ. Respiration in its true sense is a function of the skin, oxygen being taken in and both carbonic acid and water being given off. The proportions of these substances are, however, very different from those of lung respiration. The oxygen absorbed is only $\frac{1}{127}$ of that taken in by the lungs, and the carbonic acid excreted amounts to only one hundred and fifty grains in twenty-four hours; both are comparatively insignificant. But the water given off by the skin is twice as great as that excreted from the lungs, being some twenty ounces daily. It passes off mostly as a vapor of whose presence we are not cognizant, the insensible perspiration; but under certain conditions its excretion is more rapid, and it accumulates in drops as the sensible perspiration or sweat. Muscular exercise, an external high temperature, the emotions, etc., increase the production of water; the muscles of the skin relax, the vessels fill up, and the sweat pours out.

4. The skin as a secreting organ. Both the sweat and the sebum are secretory products of the skin.

The sweat is a clear, watery, saline fluid. It consists of from 97 to 99.5 per cent. of water, together with a small amount of ammonium chloride, ammonia, organic matters such as creatine, etc., and .04 per cent. of urea. Under certain pathological conditions, as in renal disease, this latter element may be increased so much as to be deposited in the form of crystals on the surface of the integument. The amount of solid matter in the perspiration depends, however, very much upon the amount of water that is ingested, and on the quantity of the secretion that is poured out. It is usually acid in reaction; but it becomes neutral or even alkaline when produced in large quantities and for long periods of time.

The sweat is a true secretion, and is under direct nervous influence, as is shown by its well-known ready response to mental stimuli. There are special sweat-nerves, some coming from the spinal column, and others from the sympathetic, the centers that control the secretion being found in the cortex, the medulla oblongata, and the ganglia of the anterior cornua. The amount of the sweat varies greatly, and is dependent upon many different conditions; but its average is one and three quarter pounds daily. It is increased by certain conditions, as decrease in the amount of the watery vapor of the atmosphere, warming of the body, muscular exercise, etc.; by direct nervous influence, as from mental emotions, and in certain nervous diseases; and by certain drugs, as pilocarpine and picrotoxin, which directly stimulate the sweat-nerves. It is lessened by increase of watery vapor in the air, hindering transudation; by cooling the skin, causing contraction of the vessels, and dimin-

ishing the arterial supply; by inflammations of the skin, when the sweat-nerves are paralyzed; and by certain drugs that appear to act in the same way, as atropin and agaricin.

The sweat is the chief product of the coil glands, but it is not their only one. They secrete in addition an oily material, the presence of which causes the odor the perspiration possesses and the staining of the linen that the sweat occasions. It has an important function in the lubrication of the skin; for the sebaceous glands are appendages to the hair, and their secretion is destined mainly for them; while portions of the integument that have no hairs, and consequently no sebum, as the palms and soles, are nevertheless well lubricated. This is also shown by the fact that animals that do not sweat have coil glands in their skins.

The sebum is not a true secretion, for it is the product of epithelial proliferation and fatty degeneration in the sebaceous glands, and, moreover, is not under direct nervous influence. It does not, therefore, vary with external and internal conditions as the sweat does. It consists of fat in granules and drops, of fatty-degenerated cells and cell detritus, and of cholesterin crystals. It is evidently designed to lubricate the hairs, the glands that produce it being found only in connection with these bodies, and opening by their ducts into the hair-follicles. Its production is continuous, the sebaceous matter being gradually expressed by the action of the muscular structures of the skin upon the shaft of the growing hair.

5. The skin as an excreting organ. Many substances, especially pathological ones and drugs, are extruded from the body with the sweat and the sebum. Urea is partly thus disposed of, especially when in excess, as are also iodine, bromine, etc., when taken internally.

6. The skin as an absorbent organ. This function of the skin is an extremely important one from a therapeutic point of view, since all endermic medication depends upon it; yet it can hardly be said that the integument is an active organ in this respect. The skin is certainly permeable to gases, and animals have been killed by keeping their bodies immersed in an atmosphere of sulphureted-hydrogen or carbonic-acid gas while their heads were free in the air. But water and watery solutions do not permeate the intact and fatty skin. The common idea that there is absorption of water or medicaments by the skin in the bath is an erroneous one. For the purpose of internal treatment medicated baths are quite useless. There is more water in the body after a bath, it is true; but this is simply because the body loses none of it while immersed.

When, however, the surface fat of the skin has been to some extent carefully removed beforehand by the use of ether or chloroform, we may succeed in introducing substances in watery solution into the body through the integument. More especially is this the case if the substance is used as a fine spray and for a long period of time. The constant current also enables us to introduce non-volatile substances by cataphoresis into the skin; this is markedly the case with the alkaloids

strychnia, atropia, morphia, and cocaine, and the method may be used for local anæsthesia. In all these cases, however, the substance in question enters the skin through the ducts of the sebaceous glands; the epidermis resists all such attempts. It cannot be employed on the palms and soles, where these glands do not exist. Any break in the skin also permits absorption to be much more active. Under such circumstances many substances, such as salicylic acid, tincture of iodine, iodide of potash, etc., may be introduced into the system and demonstrated in the urine. Even salves and ointments are not absorbed by the unbroken skin, except in so far as they can be introduced into the sebaceous glands.

7. The skin as an organ of sensation. The skin is the essential organ of ordinary sensation; but the exact relationship of the tactile organs, the end-bulbs, Pacinian and tactile corpuscles to the various forms of the faculty is not known. It is well proven, however, that the parts most abundantly supplied with them and with nerve-fibers have the greatest sensibility.

We distinguish in the skin the ordinary tactile or pressure sensibility, the temperature sensibility, and the sense of location. These different varieties of sensation have each their special nerves; for it is certain that the kind of sensation experienced depends, not on the nature of the irritant that causes it, but on the nerve that is irritated. The same influence may cause different sensations in different parts of the body—warmth, cold, pain, or pressure; and after certain injuries to the nerve-centers, one kind of sensation, as that of temperature, may be lost in a part, while another, as that of ordinary touch, may remain.

The ordinary tactile sensibility and its varieties, itching, tingling, formication, pain, etc., varies much in its acuteness in different parts of the body. Thus pin-points can be felt as double on the finger-tips at a distance of only 2–3 mm., on the back of the hands they must be 6 mm. apart, and on the skin of the back 6 cm. distant from one another. The sense of temperature, by which we distinguish the different degrees of heat and cold, and the sense of location, which enables us to refer a certain sensation to a certain portion of the body, also vary greatly in sharpness in different portions of the integument.

SYMPTOMATOLOGY AND DIAGNOSIS.

The symptoms of cutaneous disease are of varying origin and occur in manifold combinations. They vary in different individuals and in different stages in the same malady; they are changed by treatment and obscured by accidental and non-essential appearances. In comparatively few maladies is there a characteristic change, a pathognomonic skin symptom. Nevertheless the dermatologist has the great advantage of dealing with an organ that can be seen and felt, and of which, if necessary, microscopical examination can be made during life.

The patient's family and personal history may throw important light on the

origin and nature of his malady. So also may the history of the disease: the time that it has been present, as in lupus or syphilis; the manner of its appearance, as in an urticaria or an ecthyma; its mode of progression, as in trichophytosis or epithelioma. But we must beware of placing too much reliance upon history. The patient's statements are erroneous as frequently from ignorance or forgetfulness as from intent. In the venereal maladies more especially the history is not only useless, but misleading; and here we should avoid direct questioning, and rely rather upon the eruptions, anginas, abortions, etc. I do not hesitate to say that the diagnosis of the syphilodermata is better made without the patient's assistance.

The symptoms themselves are either subjective or objective. The former are of minor importance, and are often absent. They are either general symptoms, as malaise, fever, headache, chills, etc., or special ones, referred to the affected skin. There may be anæsthesia, as in lepra; hyperæsthesia, as in the inflammatory diseases; or, more commonly, some form of paræsthesia, described by the patient as itching, smarting, tingling, formication, a sensation of heat or cold, a sense of constriction, or pain in various degrees.

The objective symptoms are more numerous and important, and upon them the diagnosis must finally be made. They consist of the skin changes which the examiner himself can appreciate. They are known as lesions, and their careful study is essential. And in order that the physician may not be misled, it is well to insist in every case upon an examination of the entire integument of the patient, as well as of the visible mucosæ.

Certain general conditions must first be mentioned. A symmetrical general eruption is usually due to internal causes; an unsymmetrical eruption is often the effect of external and local agents. If the covered parts only are involved, the clothing, or things that it contains, may be the cause of the disease. Excoriations and scratch-marks show the presence of pruritus, no matter what the patient's statements may be. Eruptions confined to the face, hands, and genitalia lead us to suspect the action of some external contagion, as that of poison-ivy or the itch-insect.

The lesions themselves may be all of one kind or uniform, as in lichen planus, or they may be multiform, as in scabies. They may be discrete, as in acne, or confluent, as in some forms of variola. There is the greatest variety in their distribution. When there are many lesions over the whole body they usually follow the lines of cleavage of the corium, which O. Simon has so beautifully demonstrated, running in a general way from the spinal column parallel to the ribs, and in definite whorls and curves on the limbs and head. In other cases they follow the course of the nerve-trunks, as in zoster and leprosy. The configuration is also various, and a number of terms are employed to designate it. When the lesions are small and pinhead-sized they are called punctate; when larger, like drops, they are guttate; when the size of a coin, nummular; all of which occur in ordinary psoriasis. Again, the lesions may be circular or circinate, as in ringworm, or composed of annular con-

centric rings, as in herpes iris, or gyrate, as in some of the syphilodermata. They may be hypertrophic, projecting above the surface of the skin, and perhaps exulcerated, as in lupus. Sometimes they are dry, as in eczema squamosum, and sometimes, as in eczema madidans, moist and weeping. In some maladies there is a definite locality of predilection, as in acne and lupus erythematosus for the face, and in erythema multiforme for the backs of the hands; in others, as in syphilis, the lesions may occur anywhere. Some are symmetrical, appearing on both sides of the trunk, or on both palms and soles; this is especially the case with the syphilodermata. Finally, as they vary much in color, sometimes in different stages of the same disease, a word descriptive of the color being often incorporated in the name, as is the case with lichen ruber and scarlatina. Many other qualifying terms are employed, the consideration of which is not required here.

The lesions found on the skin are either primary or secondary. The primary lesions are:

1. Macules, *tâches* (Fr.), *Flecke* (Ger.), circumscribed alterations in the color of the skin, without other change. They are usually rounded, but may be irregular in shape. Their color depends on their cause, but is most often red or brown or purplish. Some disappear on pressure; others do not. They may be due to: (a) Chemical agents, as in the stains caused by nitrate of silver. They are permanent, and do not disappear on pressure. (b) Hyperemia, giving bright-red spots if arterial, as in roseola, and a purplish discoloration if venous, as in rosacea. They disappear when pressed upon. (c) Pigmentary changes, as in vitiligo and chloasma, which are permanent, and are not changed by pressure. If the color is increased the spots show various shades of brown; if decreased they are white. (d) Extravasation of blood or blood coloring-matter into the skin. Macules of this kind are bright red at first, changing to purplish, brown, and yellow as they fade away. When the pigment is deposited in streaks they are called vibices; if in spots they are called petechiæ; while larger accumulations are known as ecchymoses or ecchymomata. (e) Permanent dilatation of the cutaneous vessels or the formation of new ones. Capillary nævi and telangiectases come under this heading. They are reddish or bluish, according to the variety of vessel chiefly involved, and do not disappear under pressure. The diffuse pigmentations of the skin which occur in Addison's disease, argyria, etc., do not belong to this category.

2. Papules, *papules* (Fr.), *Knötchen* (Ger.), circumscribed projections from pinhead to pea size, containing no visible fluid. They are frequently aggregated in groups, as in syphilis. They may be seated in the corium or around the sebaceous glands or the hair-follicles. Their shape may be acuminate, rounded, flat-topped, or umbilicated. Their color varies, being sometimes pale white or rosy, and at others violaceous or even blackish. They may remain papules throughout their existence, as in lichen planus; or they may become vesicles or pustules, as in variola; or they may break down into ulcers, as in syphilis, or become enlarged into tuber-

cles, as in the same disease. They may itch severely, as in papular eczema, or they may cause no subjective symptoms at all, as in acne. They are due to: (a) circumscribed plastic exudations in the skin (papular eczema); (b) collections of sebum in the glands (milia); (c) accumulations of epidermic scales around the hair-shafts, as in keratosis pilaris; (d) blood accumulations, as in purpura papulosa; (e) hypertrophy of normal structures, as of the dermic papillæ in warts; (f) circumscribed collections of new cells, as in lupus. They disappear finally by absorption, and often leave a macular stain behind.

3. Tubercles, *tubercules* (Fr.), *Knoten* (Ger.), are circumscribed projections of from pea to cherry size, containing no visible fluid. They may be considered as enlarged papules, but differ from the latter in being seated in the deeper corium and subcutis. They project to varying degrees above the surface, the greater part of their mass being often embedded in the skin. Their size and shape are very various; they may be attached to the skin by a broad base, or be pedunculated. They are caused by: (a) circumscribed collections of new cells, as in lepra and cancer; (b) circumscribed hypertrophy of a portion of the corium, as in fibroma molluscum. They end by absorption, or by breaking down and ulceration, and usually leave scars behind.

4. Tumors, *tumeurs* (Fr.), *Geschwülste*, *Knollen* (Ger.), are masses of walnut size or over, situated in or under the skin. There is no limit to their size, and their shape and color are very variable. They may be fixed or movable, or they may be pedunculated. Often they project above the surface, as in fibroma; but sometimes, as in erythema nodosum, they are deep-seated. They are caused by: (a) hypertrophy of existing elements of the skin and subcutis, as in warts and fatty tumors; (b) collections of new cells, as in epithelioma. They may remain stationary for long periods, or break down and ulcerate.

5. Vesicles, *vésicules* (Fr.), *Bläschen* (Ger.), are circumscribed elevations of the corneous layer of the epidermis containing a clear fluid, and from pinhead to pea-sized. They may be rounded or acuminate, as in vesicular eczema, or umbilicated, as in variola. They originate in the deeper layers of the epidermis. They may be simple chambers, as in sudamina, or divided into compartments, as in varicella. They are usually short-lived, rupturing and spilling their contents on the surface of the skin; but these latter may dry up or be absorbed. Again, they may go on to form pustules. They often occur in groups, as in zoster and herpes febrilis; but they may be scattered over the body, as in varicella. They are generally accompanied by burning or itching.

6. Bullæ or blebs, *bulles* (Fr.), *Blasen* (Ger.), are irregular elevations of the epidermis varying in size from that of a large pea to that of an egg, and containing clear serum, sero-pus, pus, or blood. They are formed, like the vesicles, in the deeper layers of the rete. They vary much in size, large and small ones being usually found together, as in pemphigus; the smaller bullæ are rounded or oval,

while the larger ones, often formed by the coalescence of several blebs, are irregular in shape. They are single-chambered, with strong walls that do not easily rupture; their contents usually dry up, and they end by desiccation. There is no tendency to grouping, as with the vesicles. They occasionally occur in many of the acute inflammations of the skin, as urticaria and eczema; but they are commonest in pemphigus, herpes iris, erysipelas, scalds, and burns.

7. Pustules, *pustules* (Fr.), *Pusteln* (Ger.), are circumscribed elevations of the epidermis containing pus, and varying in size from a pin-point to a filbert. They are really cutaneous abscesses, and always contain pus-cocci. They may originate as such; but usually, as in eczema, variola, etc., they begin as papules or vesicles. Their color is yellowish white, occasionally being darker or reddish when blood is mingled with their purulent contents. Being inflammatory products, they are always surrounded by a more or less extensive red areola of inflamed skin. Their shape may be acuminate or round, as in acne, or umbilicated, as in variola, or flattened and irregular, as in ecthyma. They usually rupture, their contents forming thick yellowish-brown or greenish crusts; but they may also end by desiccation. Pain and tenderness are marked symptoms when the pustules are deep-seated. They may be superficial, as in impetigo, or the process may extend to the corium, as in ecthyma, or they may occur around the sebaceous glands, as in acne, or in connection with the hair-follicles, as in sycosis. They are of common occurrence also in syphilis, scabies, and many dermatites. If the corium is involved they leave scars behind.

8. Wheals, *plaques ortiées* (Fr.), *Quaddeln* (Ger.), are flat elevations of the integument, from pinhead- to egg-sized, caused by a circumscribed œdema of the skin. They are due to a sudden outpouring of a thin serum from the papillary vessels, with subsequent vascular spasm; when this latter relaxes the effused fluid is rapidly taken up again. The lesions are therefore very fugacious. Sometimes discrete, they usually coalesce into irregular plaques, as is seen in ordinary urticaria. Their color is reddish or whitish, dependent on the degree of vascular spasm, with a pink areola; occasionally they are purplish in color, as in some forms of purpura. Sometimes they are followed by discoloration of the skin, as in urticaria pigmentosa. The itching is intense and is a most marked subjective symptom; occasionally there is burning or tingling.

Secondary lesions occur in consequence of the existence of primary ones, or from other causes. They are:

1. Excoriations or abrasions, *excoriations* (Fr.), *Hautabschürfungen* (Ger.), losses of tissue of the skin due to mechanical causes. They vary much in size, shape, and extent. They occur most commonly in the itchy diseases, and are caused by the finger-nails. They are generally superficial lesions, the corneous layer of the epidermis only being removed and the mucous layer exposed. A thin serum is exuded, which dries up into brownish crusts; and after these fall off a temporary discolora-

tion of the skin is left. In rare cases the deeper layers of the epidermis or the corium itself is involved, and scars result. Excoriations usually occur in lines and streaks, which are studded with the minute bleeding points of the denuded dermic papillæ. They are most commonly found in eczema, scabies, phtheiriasis, pruritus, etc.

2. Scales, *squâmes* (Fr.), *Schuppen* (Ger.), are dry, laminated masses of epithelium, separated from the tissues below and sometimes mixed with sebum. Their size, shape, and quantity are very variable. They are usually dry, harsh, and brittle (eczema squamosum), their color is whitish or grayish, and they are often shiny. They may occur in large silvery lamellæ (psoriasis), or in smaller plates (pityriasis), or as minute bran-like flakes (seborrhea). They are very common in the inflammatory diseases of the skin (scarlatina, erysipelas, eczema, etc.). The hyperemia and inflammation of the papillary layer cause an excessive production of epidermic cells, in which the normal process of cornification is replaced by a simple desiccation. They often occur with other lesions, as on the tops of papules and tubercles.

3. Crusts or scabs, *croûtes* (Fr.), *Borken*, *Krusten* (Ger.), are masses composed of dried exudation, or sometimes of a fungous growth. They vary much in size and shape, and may be adherent or loose. They are caused by: (a) Inflammatory exudations. If these be serum they are yellow and friable, as in eczema; if it be pus they are darker and thicker (ecthyma); if mixed with blood they are reddish or blackish (pruritus). (b) Secretions, especially sebum, giving yellow, flat, adherent, and greasy crusts (seborrhea). (c) Fungi, causing yellowish or grayish crusts of varying shape (favus). The crusts of syphilis are dark brown or greenish in color, have a heaped-up, oyster-shell-like appearance, and are known as rupia.

4. Fissures, *fissures* (Fr.), *Rhagaden*, *Hautschründe* (Ger.), are linear solutions of continuity of the skin. They usually involve only the derma, but occasionally they may extend into the corium. They may be dry or secreting or crusted. They occur as the result of motion in parts of the skin that have lost their elasticity, and more especially in the inflammatory diseases (eczema, syphilis, dermatitis). They are oftenest seen about the joints, upon the palms and soles, and around the mouth and anus. They are frequently very painful.

5. Ulcers, *ulcères* (Fr.), *Geschwüre* (Ger.), are losses of substance of the skin involving the corium and caused by disease. They occur in a variety of maladies, as dermatitis, syphilis, lupus, leprosy, epithelioma, etc. They may be single or multiple, large or small, and rounded, kidney-shaped, or irregular; their edges may be sloping or undermined; their bases may be dry or moist and covered with healthy granulations, or they may consist of necrotic tissue bathed in a foul discharge. These points are characteristic in the ulcers of many of the above maladies, and are of essential aid in their diagnosis. Ulcers are especially common on the lower extremities on account of the frequency and persistence of dermatitis in that locality. They are sometimes entirely insensitive, but they may be very painful and tender. They frequently last for long periods of time, and they always leave a scar.

6. Cicatrices or scars, *cicatrices* (Fr.), *Narben* (Ger.), are connective-tissue new formations replacing dermal losses of substance in which the corium has been destroyed. From this latter condition it follows that papillæ, hairs, and glands are absent in scars, though vessels and nerves remain, and the surface epithelium is present. They are of all sizes, shapes, and thicknesses; they are raised or depressed, smooth or puckered. They are often very characteristic lesions, and they frequently enable us to diagnose the nature of past disease. The new connective tissue shrinks in the course of time, and the scar, at first soft and red, becomes harder, whiter, and glistening, and frequently causes deformity by the traction that it exerts on neighboring parts (ectropion). These changes are due in part to the gradual expression of the blood by the contraction of the new growth, and in part to the destruction of the mucous layer of the epidermis. Loss of tissue leading to scarring occurs in: (a) Ulceration; this is the commonest cause, and is seen in many diseases (dermatitis, syphilis, wounds, burns). (b) Interstitial absorption, when the derma is infiltrated with new cells, and the normal elements are destroyed and absorbed, to be replaced by connective tissue (lupus, morphæa). (c) Pressure, causing absorption and new connective-tissue formation; this may be from within, as is seen in the lineæ albicantes caused by distention (pregnancy, tumors), or from without, as by a parasitic growth (favus). There are usually no subjective symptoms, though scars are sometimes painful.

7. Stains. These occur commonly after the various inflammatory diseases, and are caused by the blood coloring-matter that has escaped during the process. In many of them the redness is not marked, and passes off in a short time, as in erythema multiforme, psoriasis, etc.; but in others it is darker and more persistent, as in syphilis and lichen planus.

GENERAL ETIOLOGY.

The causes of cutaneous diseases are very numerous, and only a cursory review of them can be given here. Many conditions, external and internal, may cause deviation from the normal. We may broadly divide skin diseases into those that are essentially symptomatic (scarlatina, measles), and those that are idiopathic and proper to the organ itself (keloid, verruca).

Climate has a slight influence, some diseases occurring chiefly in tropical climates (leprosy, elephantiasis Arabum); season has more. Some maladies occur chiefly in hot weather (lichen tropicus, lentigo); others appear in spring and autumn (erythema multiforme, psoriasis); others, again, are worse in winter (eczema and other inflammatory diseases). Occupation has a well-marked effect, as is shown by the "mortar eczemas" on the hands of masons, the callosities on the palms of laborers, and the dermatites of those employed in chemical factories and dye-works. Clothing, if of flannel, may excite pruritus, and the dyestuffs in it frequently set up eczemas.

Uncleanliness, strange to say, does not appear to be of much importance as an etiological factor in the production of skin disease, save in so far as it favors the persistence of the parasitic diseases (phtheiriasis, scabies, etc.), while the too frequent use of water and soap is of marked influence in keeping up catarrhal inflammation of the skin.

Food is a factor of undoubted importance. It acts directly as an irritant if improper in quantity or quality, and indirectly by lowering nutrition, depressing cell vitality, and laying the tissues of the skin open to attack. Shell-fish, strawberries, etc., frequently cause urticarias, and in some individuals furunculosis is brought on by the ingestion of cheese. Drugs cause various eruptions, especially erythemas and urticarias; iodine and bromine cause special forms of skin disease. Locally employed, many medicinal substances, such as croton-oil, arnica, mustard, cause dermatites. Contagion is responsible for many maladies of the integument, as is the case with animal and vegetable parasites in the exanthemata, syphilis, and malignant pustule.

Race influences skin eruptions also. Negroes are prone to have keloid and leucoderma, and Jews are more frequently the victims of sarcoma cutis than others. Heredity is not so important a factor as is usually supposed, most of the instances that are cited being due to accident. The anatomical peculiarities of sex render males subject to *sycosis barbæ*, while females alone suffer from Paget's disease. Apart from these, however, males have epithelioma oftener than females, while the reverse is the case with *lupus erythematosus*.

Age is a factor also. Children have *trichophytosis capitis* and *impetigo contagiosa*; *ichthyosis* generally shows itself by the end of the first year, and *lupus vulgaris* begins in early life. On the other hand, all the parasitic vegetable diseases are rare after the age of fifty, a time of life when carcinoma most commonly appears. At puberty the development of the glandular and hairy systems causes the especial prevalence of certain cutaneous affections (*comedo*, *seborrhea*, *acne vulgaris*, which latter gets worse in women at the menstrual epoch). *Chloasma* and *hydroa* occur with especial frequency during pregnancy.

Certain internal diseases have a marked effect on the cutaneous envelop. Digestive disturbances cause urticaria, *rosacea*, *acne*, and *pruritus*; catarrhal jaundice and disease of the liver are often accompanied by *pruritus* and *xanthoma*; and boils, carbuncle, and gangrene are frequently seen in Bright's disease and diabetes.

GENERAL THERAPEUTICS.

The rules of general therapeutics hold good in the maladies of the skin, and we need be no more afraid of curing a skin lesion too quickly, of "driving the disease in," than we are of stopping the inflammation in a joint or checking a gastro-enteritis too precipitately. The quickest cure with the least possible discomfort insures the most permanent result with the smallest amount of damage. The ideal thera-

peusis is of course the causative one; but our present knowledge permits of its application in only a minority of cases. We are of necessity compelled to rely largely upon symptomatic treatment. Prophylaxis is as important here as elsewhere, and we are constantly called upon to protect the skin from chemical, mechanical, and microbic injuries.

The intimate relationship between the integument and the system at large, and the frequent interdependence of morbid changes in the skin with those of internal organs, render it clear that a practical acquaintance with general medicine is an essential element in the successful treatment of diseases of the skin. Any attempt to separate the cutaneous envelop, pathologically or therapeutically, from the rest of the system, is foredoomed to the failure that awaits incomplete knowledge and empirical treatment. Hence treatment should be in most cases both constitutional and local; and, whatever our opinions may be as to their relative importance in individual diseases, neither can be neglected without detriment to the other. A well-balanced combination of both, based on a careful diagnosis both of the local skin lesions and of the underlying and concomitant body conditions, will give the best results.

Almost all the drugs of the pharmacopœia have been employed at one time or another in dermato-therapeutics, but the vast majority of them have been rightly abandoned. Recent years have seen many new remedies recommended, mostly the synthetic products of the laboratory. Of these also most have not withstood the test of time, but some valuable ones remain. New methods have been developed which have largely replaced the older ones, and for these we are indebted most largely and in the first place to Unna. But excessive richness of resource does not always mean greatest usefulness; and he who employs but a comparatively small number of methods and remedies will frequently be most successful in their use.

GENERAL METHODS.

These must necessarily depend very largely upon the general health and constitutional peculiarities of the patient. The appropriate treatment for each diseased condition of the internal organs must be employed, but their consideration belongs to the domain of general medicine.

General hygiene is naturally of the greatest importance, for the nutrition of the skin is improved in the same way as is that of the internal organs. Washing and bathing are primary requisites; they stimulate the circulation of the skin, and remove parasites and detritus. Exercise and change of climate are efficient aids to our efforts. Tonics—iron, cod-liver oil, quinine, and the simple bitters—must be used on general principles.

Diet must not be neglected. Diseased conditions of the skin sympathize more closely than most others with gastro-intestinal disturbances, as I have shown above,

and much of our success or failure in their treatment will depend on attention to the food. It should be nutritious and bland; and condiments, salted and spiced foods, etc., should generally be avoided as indigestible. When there is abnormal action or disease of the alimentary tract the diet must be varied in accordance with the indications. Ales, wines, and liquors are in general bad; but they may be used sparingly in those with weak digestions and in the old. A complete change of diet is often of great importance, especially in chronic eczema and psoriasis; and I have sometimes found the latter disease rebellious in spite of all manner of treatment, until the patient was put on an absolute milk diet.

Defective cutaneous action, as occurs in the inflammations, can frequently be aided by stimulating the kidneys by diuretics; the acetate and citrate of potash, with buchu, digitalis, etc., may be frequently administered with benefit.

Purgatives, saline and other, are of especial value in acne, pruritus, and urticaria, which are so frequently dependent on digestive disturbances. In almost every case of skin disease the regulation of the bowels is a necessity.

Water is useful to cleanse the skin from foreign matter, living organisms, scales, and crusts. It is an irritant, and must be employed with caution in conditions of acute inflammation; but it is often useful therapeutically in the chronic forms (chronic eczema, pruritus, psoriasis). It is employed as a general bath or as a lotion.

Medicated baths: (a) Alkaline, usually of bicarbonate of soda or borax in the proportion of 1 to 200, are useful to remove crusts and scales, and in some subacute inflammations. (b) Sulphur baths, prepared by adding two to four ounces of sulphide of potassium or an equal quantity of Vleminckx's solution (No. 1, p. 43) to the water (scabies, etc.). (c) Starch and bran baths of varying strengths are useful in urticaria and other itchy eruptions.

Lotions are often very efficient means of medicating the skin. They are: (a) Sedative, when opium, belladonna, glycerin, carbolic acid, boric acid, lead, etc., are added, and are useful in chronic inflammations (seborrheal eczema, acne vulgaris, rosacea) or as an antipruritic (pruritus, urticaria). (b) Stimulating, with alcohol, corrosive sublimate, tar, and various acids and alkalis (chronic eczema, etc.). (c) Astringent, when prepared with tannin and lead (hyperidrosis).

Glycerin does not penetrate the skin and therefore should not be employed where more than a superficial effect is required. It is irritant when pure, even when free from formic and butyric acids; but when diluted with water it is rather sedative. With starch glycerin forms a series of pasty semisolids known as glyceroles; their action is mainly protective. Perhaps the commonest is the glycerol of lead.

Alcohol, ether, and chloroform, when applied pure, take water and fat from the skin, and render it dry and scaly. Their use thus promotes the absorption of watery fluids and fats. Ethereal solutions of drugs, employed as sprays, are useful, cheap, and often very effective.

Kerosene and benzin are employed to destroy vermin. They must be used with caution on account of their inflammability.

Oils are either bland, as olive-oil, sweet-almond oil, castor- and cod-liver oils, or stimulating, as the oils derived from tar, the oils of cade, birch, juniper, etc. They are employed to soften crusts and facilitate their removal, to protect inflamed dermal surfaces, and to replace the natural fatty matters of the skin and hair. For the first purpose olive-oil and oil of sweet almonds are the best (pityriasis rubra, pustular eczema, psoriasis); linseed-oil is the favorite for protective purposes (burns); cod-liver oil is employed externally and internally in the tubercular skin diseases with excellent effect; and castor-oil is frequently added in the proportion of 1 to 10 per cent. to various spirituous lotions. The oils also enter into the composition of many of the ointments.

Fats are employed to soften crusts, to replace the natural fatty matters, and as bases for ointments. Some are waxy and hard; others, containing more olein, are soft and butter-like. The chief varieties are: (a) Adeps suillis, or lard, best employed, with the addition of 4 per cent. of benzoic acid to prevent decomposition, as benzoated lard. This is a glycerin fat, and has been the one in common use; but it is fast being displaced by (b) adeps lanæ (lanolin), a cholesterin fat extracted from lamb's-wool. This is sterile and does not become rancid; it enters the skin more readily than do the ordinary glycerin fats, and, most important of all, it is readily miscible with water. Being very tenacious, it requires the addition of a small quantity of olive-oil or glycerin. It is undoubtedly the best general ointment basis that we possess, more especially in cases where deep penetration into the skin is required (ringworm, psoriasis, syphilis inunctions). (c) Suet, used chiefly in the preparation of Unna's salve-muslins. (d) Marrow fat, employed for pomades and cosmetics. Cocoa-butter, spermaceti, white wax, and paraffin are also used.

Vaseline and cosmoline are not fats, but petroleum products. They have been extensively used as ointment bases, and are valuable when applications are to be made to the hairy parts, where lard or adeps lanæ are too glutinous. They irritate the skin, however, and Shoemaker has shown that their penetrating power is far inferior to that of the other bases.

Ointments are the oldest, commonest, and in most cases still the best form in which to apply local remedies to the integument. They are made of the various fats above mentioned, mixed with different medicinal substances. They are: (a) Sedative, protecting inflamed parts from the air, moisture, etc. (acute eczema, dermatitis); cold cream and simple ointment are examples. (b) Astringent, containing zinc oxide, lead acetate or oleate, boracic acid (subacute eczema, etc.) (c) Antiseptic, with iodoform, salicylic, boracic, or carbolic acids or ammoniated mercury. These are employed in the pustular skin diseases (impetigo contagiosa, eczema pustulosum). (d) Stimulating, and containing tar, oil of cade, carbolic acid, naphthol, chrysarobin, pyrogallol, salicylic acid, sulphur, mercury salts, etc. (chronic inflammations, psoria-

sis, lichen planus, prurigo). In all cases they have a deeper and more permanent effect when spread upon muslin and bound on the part than when they are simply rubbed in.

Pastes are very efficient applications, being practically salves made stiffer by the addition of various powders; they may often be substituted for these latter with advantage. They form better protectives, since they adhere more closely to the skin and exercise some pressure upon it. They soon dry, and their porosity permits the free escape of the dermal secretions. Lassar has given us the formula for one of the first ones, which is known by his name, and is one of the commonest and most useful (No. 2, p. 43). The gum arabic paste of Unna is also widely employed (No. 3, p. 43). Various substances may be incorporated with these pastes, the special formulas for which will be given when we consider the treatment of the diseases in which they are used.

No. 1. *Vlemingx's Solution.*

R Calcis 1 part
Sulphur. sublim. 2 parts
Aq. dest. 20 "
Coque ad $\frac{3}{4}$ vi; deinde filtra.

No. 2. *Lassar's Paste.*

R Acid. salicyl. 1 part
Zinci oxidi
Amyli āā. 12 parts
Adip. lanæ 24 "

No. 3. *Gum Arabic Paste.*

R Mucilag. gum. acac.
Glycerini āā. 20 parts
Pulv. (zinci oxidi or ac.
salicyl.) 40 "

No. 4. *Glyco-gelatin.*

R Zinci oxidi 40 parts
Gelatin. alb.
Glycerini āā. 25 "
Aq. dest. 110 "

No. 5. *Hebra's Green Soap Tincture.*

R Sapon. virid. 8 parts
Spirit. vini rect. 4 "
Solve, filtra, et adde
Spirit. lavandulæ 1 part

Plasters are employed where a continuous and deep-seated action is required. Lead-plaster, being less irritating than that made with resin, is to be preferred for use on the skin. By this means the various drugs can be applied to the skin. Better, however, and more extensively used, are certain recent modifications. These are: (a) Salve-muslins, which we owe to Unna, and which are ointments already spread upon unbleached muslin. They are made by drawing the muslin through the liquid ointment mass, and, being non-adhesive and coated on both sides, they need the protection and support of an external bandage. They are comfortable, elegant, and very adaptable. All the ordinary ointments can be procured in this form, those most commonly employed being the zinc, salicylic acid, diachylon, and

mercurial muslins. Still more desirable than these are the two following preparations, devised respectively by Unna and H. von Hebra. (b) Plaster-muslins, which are ointments on an impermeable gutta-percha base, and spread only on one side. As they all contain the oleate of alum they are adhesive of themselves, and hence require no external dressing for protection and support. Arsenious, boric, and carbolic acids, chrysarobin, pyrogallol, iodoform, and all the other drugs that are employed in dermato-therapeutics are now prepared in this form, which is very convenient and cleanly. It is a specially desirable mode of application where a deep-seated action is required, or when a complicated area, as the lobe of the ear, is to be treated. (c) Collempластира, made of rubber and adeps lanæ with the admixture of various drugs, and spread on muslin, are as convenient as the plaster-muslins, and are much employed.

The glyco-gelatins are important preparations that we owe to Pick and Unna. They dry up into protecting skins, and, with varying proportions of tar, resorcin, sulphur, chrysarobin, and other drugs, are extremely valuable in the localized dermatoses (dermatitis, eczema, pruritus). Dabbing the surface with absorbent cotton and applying a bandage before the gelatin has hardened increases their thickness and protecting power. They hinder scratching, keep away external irritants, and sustain the parts. Unna's formula (No. 4, p. 43) is good, but the proportion of the various ingredients must be varied with the season of the year and the amount of other fluid or solid ingredients that are added.

Traumaticin, a 10-per-cent. solution of gutta-percha in chloroform, and flexible collodion are occasionally employed in circumscribed dermatoses. Chrysarobin, iodoform, zinc oxide, salicylic acid, etc., may be thus applied (chilblains, corns, rhagades, ringworm, and lupus erythematosus).

Salve-pencils are crayons of wax and oil in which are incorporated various drugs—carbolic acid, chrysarobin, ichthyol, corrosive sublimate, etc. They may be employed for very small disease areas (psoriasis, eczema seborrheicum). Paste-pencils contain no fat, being made of starch and gum. Arsenious acid, corrosive sublimate, iodoform, cocaine, etc., may be thus applied to limited surfaces of skin. They are especially valuable in that they can be used on denuded areas and on mucous membranes (chancre, chancroid, condylomata, lupus).

Soaps are combinations of the fatty acids and alkalis, sodium forming the hard and potash the soft varieties of the article. They are used to cleanse the skin of dirt and crusts, to remove the corneous layer of the epidermis, and as a menstruum for various medicinal substances. They are cleanly, energetic, and cheap; and the perfection that has been attained in their manufacture has led to their employment in a large variety of dermatoses. The surface may be simply washed with them, or the lather may be allowed to dry in situ; but when a more deep-seated action is desired, the soaped part may be covered with a layer of rubber tissue. The alkaline soaps are employed to deprive the integument of its fat, and to soften and re-

move the upper epidermic layers (psoriasis, ichthyosis). They are very irritant, however, and cannot be employed in inflammatory conditions. The most useful of these is the *sapo viridis* or green soap, which may be used either pure or in an alcoholic solution, as recommended by Hebra (No. 5, p. 43). The best skin soaps, however, must be either neutral or contain an excess of fatty material, like the so-called superfatted soaps of Unna. Many varieties are manufactured, the most useful being those containing mercury, tar, sulphur, ichthyol, resorcin, creolin, and iodoform (syphilis, chronic eczema, scabies, rosacea, etc.). The marble and sand soaps are employed where a rapid removal of the superficial epidermic layers is desired (comedo, acne).

Powders are used to protect the skin and to absorb secretions. Starch and talcum are those most commonly employed. They may be dusted or insufflated over the affected parts, or applied inclosed in linen bags. Various medicinal powders, as calomel, aristol, iodoform, are also used.

Caustics are extensively employed in certain diseases. Caustic potash is effective but very diffusible, and must be used with caution; arsenious acid is excellent, apparently picking out the diseased tissues, but must not be used over a large area or near the mucous orifices, as it is liable to be absorbed (neoplasms, especially epithelioma, lupus, warts). Chloride of zinc is slow and painful, but appropriate in certain cases. Chromic acid and the acid nitrate of mercury are also used (chancre).

Parasitocides are very numerous. Sulphur, naphthol, and balsam of Peru are used in scabies; corrosive sublimate, ammoniated mercury, and mercurial ointment in pediculosis. Chrysophanic acid is an excellent vegetable parasiticide (trichophytosis, favus).

Of the bactericides one of the most important is iodoform, from its action on the pus-cocci and the tubercle-bacilli. Its odor and the possible dangers of absorption are against it. Aristol and iodol are fairly good substitutes. Pyocanin has given good results in epithelioma; but the staining that it causes prevents its extensive use in dermatology.

SPECIAL REMEDIES.

Arsenic is no panacea for diseases of the skin; it is useful in but few affections and harmful in many. It acts directly upon the mucous layer of the epidermis, and is employed in chronic scaly diseases and some others (psoriasis, chronic eczema, lichen planus, pemphigus, hydroa). In the inflammatory diseases, during their acute and subacute stages, it does no good at all; in fact, it increases the gastro-intestinal irritation upon which many of them depend. It should be given always after eating. Fowler's solution is usually employed, the dose being three drops in the beginning, gradually increased to ten or fifteen, in accordance with the patient's tolerance of the drug. Arsenious acid in tablet form, or combined with black pepper in the cele-

brated Asiatic pill (No. 6, p. 46), is also an excellent form for its administration. Where the employment of mercury is also indicated, Donovan's solution, the liquor arsenici et hydrargyri iodidi, may be used. It must not be forgotten, however, that a special idiosyncrasy for arsenic exists in some cases, and we must be on the lookout for the first symptoms of poisoning—the puffy eyelids, the irritated conjunctivæ, and the coryza. It occasionally causes a general exanthem. Arsenic is also employed externally (epithelioma, rodent ulcer), in the form of Marsden's paste (No. 7, p. 46).

No. 6. Asiatic Pill.

℞ Ac. arseniosi gr. lxvi
 Pulv. pip. nig. 3ix
 Gum. acac.
 Aq āā. q. s.
 Div. in pil. No. 800.

No. 7. Marsden's Paste.

℞ Ac. arseniosi
 Pulv. gum. acac. āā. p. e.
 Aq. q. s. ut ft. pasta.

No. 8. Ungt. Chrysarobini Co.

℞ Chrysarobin 5 parts
 Salicylic acid 2 "
 Ichthyol 5 "
 Vaseline 88 "

No. 9. Calomel Suspension.

℞ Calomelani 1 part
 Albolene 10 parts
 ℥ 10 = 1 grain.

Tar is a very efficient topical application in many of the more chronic skin diseases (eczema, psoriasis). It lessens hyperemia, infiltration, discharge, and scaling, and is an efficient antipruritic. Combined with sulphur, as in Wilkinson's ointment (No. 38, p. 81), it is especially good; but it is liable to cause local irritation (acne) or systemic irritation if used too strong or in too large quantity. Pix liquida or oleum picis may be employed; but oleum cadini or oleum rusci is usually to be preferred. They may be used pure, with the addition of a little ether, as a tincture, or in a 10-per-cent. ointment (subacute and chronic inflammations, psoriasis, parasitic diseases, and pruriginous diseases). In acute inflammations, as eczema madidans, they cannot be used. The oil of lavender will mask the odor of the drug.

Ichthyol is the common name of the sulph-ichthyolate of ammonium, and is a tarry liquid, the distillation product of a fossil bitumen found in the Tyrol and introduced into dermato-therapeutics by P. G. Unna. It has been used internally with much success, in pills of from one to five grains, to reduce the hyperemias of the erythematous diseases (rosacea, lupus erythematosus). In weak concentrations, 1 to 4 per cent., it is keratoplastic, stimulating proliferation of the corneous layer (intertrigo, acute eczema); in the proportions of 10 to 20 per cent. it is keratolytic, destroying the horny layer and acting as a vasoconstrictant, antiseborrheic, and antiparasitic agent (chronic eczema, dermatitis, pruritus, acne, rosacea, etc.). Nussbaum first recommended its use in erysipelas, which has become almost universal; 20- to 50-per-cent. ointments are proper. It may be applied as a salve, a paste, a solution, or a soap.

Thiol is employed as a substitute for ichthyol, and, like it, contains a large proportion of sulphur. It is less irritating and odorless, but also less active. It comes in both liquid and powder form, and the indications for its use are the same as those for ichthyol (burns, acne, rosacea, zoster).

Resorcin, like ichthyol, is keratoplastic and keratolytic in solutions of different strengths. Care must be taken to prescribe always the pure white "albissimum" variety. It is a valuable antipruritic, antiseborrheic, and antiparasitic (seborrhea capitis, pruritus, scabies), being employed in 1- to 5-per-cent. solution or ointment. It has been used as a 25- to 50-per-cent. paste or plaster in the treatment of superficial epitheliomata.

Sulphur is perhaps our standard parasiticide (scabies, tinea versicolor). It is also employed in acne, comedo, seborrhea, and the other affections of the sebaceous glands.

Naphthol, a coal-tar phenol, is frequently employed as a substitute for sulphur in the parasitic diseases. It is also used in the chronic inflammations of the skin, especially in psoriasis.

Chrysarobin is a very efficient stimulant to the skin, causing a dermatitis accompanied by a peculiar brownish-red to purplish staining of the skin. Patients should be warned that it ruins the clothing, and it should never be employed about the face on account of the very intense conjunctivitis that it sets up if conveyed to the eyes. In 5- to 15-per-cent. ointment, plaster, or collodion it is an extremely useful agent in psoriasis and chronic eczema. It is valuable also in favus and trichophytosis capitis. Unna's compound chrysarobin ointment is useful (No. 8, p. 46).

Anthrarobin, produced from alizarin, has been used as a substitute for chrysarobin, the indications and dosage being the same. It does not inflame the skin nor stain the clothing, but it is a far less active agent.

Iodoform finds its chief application in chancre, chancroid, and the ulcerative syphilodermata. Aristol, which is odorless, may be used in its place, but cannot replace it. The same may be said of dermatol or the subgallate of bismuth, a yellow, insoluble, and odorless powder. It is, however, of value in the acute dermatites.

Pyrogallol is, next to chrysarobin, our most valuable topical agent in the treatment of psoriasis. It must be used in weak concentration, and over not too large an area, as systemic absorption and poisoning are liable to occur. In 50-per-cent. plaster it is employed in carcinoma of the skin, where it acts radically, destroying the affected area. It is slow, but comparatively painless.

Salicylic acid occupies a peculiar place in dermato-therapeutics. It is a slow solvent of the epidermis, loosening it and separating it from the corium beneath without inflammation. It is employed in 10- to 25-per-cent. ointment, collodion, or plaster (callositas, clavus, etc.). In weaker strengths (1 to 5 per cent.) it is a keratoplastic agent, and may be used in the acute dermatoses (eczema vesiculosum).

Menthol is an excellent antipruritic, and may be employed in 5- to 10-per-cent. ointment or solution.

The preëminent value of mercury in the syphilodermata is well known. It may be introduced into the body in three chief ways. That by the mouth is the oldest, and is still in many cases the most convenient method. The proto-iodide is the preparation most commonly used, and it fills all the indications and has as few drawbacks as any of the others. While **ptyalism** and general mercurial intoxication do not readily occur, the gastro-intestinal tract is very liable to be irritated. The bi-chloride also is liable to disagree. Of the multitude of other preparations that have been employed, only the tannate, introduced by Lustgarten, deserves mention here. It causes less irritation than any of the others, can be given in larger doses, and is especially useful in the treatment of children. The cutaneous method, or that of inunction, is a very efficient way of introducing mercury into the system, and is still the favorite one with many authorities. The metal enters the deeper layers of the skin through the glandular openings to some extent, but it is certain that a large part of its efficacy is due to the inhalation and absorption through the lungs of the mercurial vapors given off during the process. Mercurial ointment, the oleate of mercury, and mercurial soap have their advocates. The method is one that requires considerable labor and patience. Stomatitis is apt to occur, and the mouth and teeth must be carefully watched. Mercurial eczemas and erythemas are also seen, but the gastro-intestinal tract escapes.

The subcutaneous or hypodermatic method we owe to Lewin, and its introduction was certainly an important advance in the treatment of the syphilitic diseases. Either the soluble or the insoluble salts may be employed. The sublimate still remains the best of the soluble salts, and is generally preferred to the albuminate of Bamberger and the formidate of Liebreich, etc. They all cause a considerable amount of pain, and the injections must be frequently repeated. The insoluble salts, and especially calomel (No. 9, p. 46), first used by Scarenzio, are very effective, and I consider their introduction into the subcutaneous and muscular tissues the best method in our possession for the treatment of luetic disease. Suspended in alboline or fluid cosmoline it can be given in doses up to $1\frac{1}{2}$ grains. The abscesses so frequently observed at first are of rare occurrence now that antiseptic precautions are regularly employed. The pain occasioned is moderate, and the resultant infiltrations usually cause but little inconvenience. Silva Araujo employs the salicylate, while Lang and Neisser prefer the so-called gray oil, composed of mercurial ointment thinned with oil. Erythemas, etc., and general intoxications are rare with this method, and the gastro-intestinal tract is unaffected.

Iodine and its compounds are also more especially used in the syphilitic skin diseases. The potassium, sodium, and ammonium salts and iodoform are those chiefly employed. In the non-syphilitic diseases their use is limited. They do

some good in scrofuloderma, lupus, keloid, but they are themselves not infrequently the cause of acneform, purpuric, and bullous eruptions.

Quinine is of value in many diseases, more especially in the neuroses (pruritus, chronic urticaria) and in maladies accompanied by malarial symptoms. It sometimes causes a general exanthem.

Iron is indicated in the diseases accompanied by anemia and chlorosis, as is frequently the case with acne and eczema. Cod-liver oil is very useful as a general skin tonic, and was highly esteemed by the elder Hebra on that account. It may be employed in scrofuloderma, lupus, tuberculosis cutis, scleroderma, chronic eczema, and syphilis, and is of especial value in children.

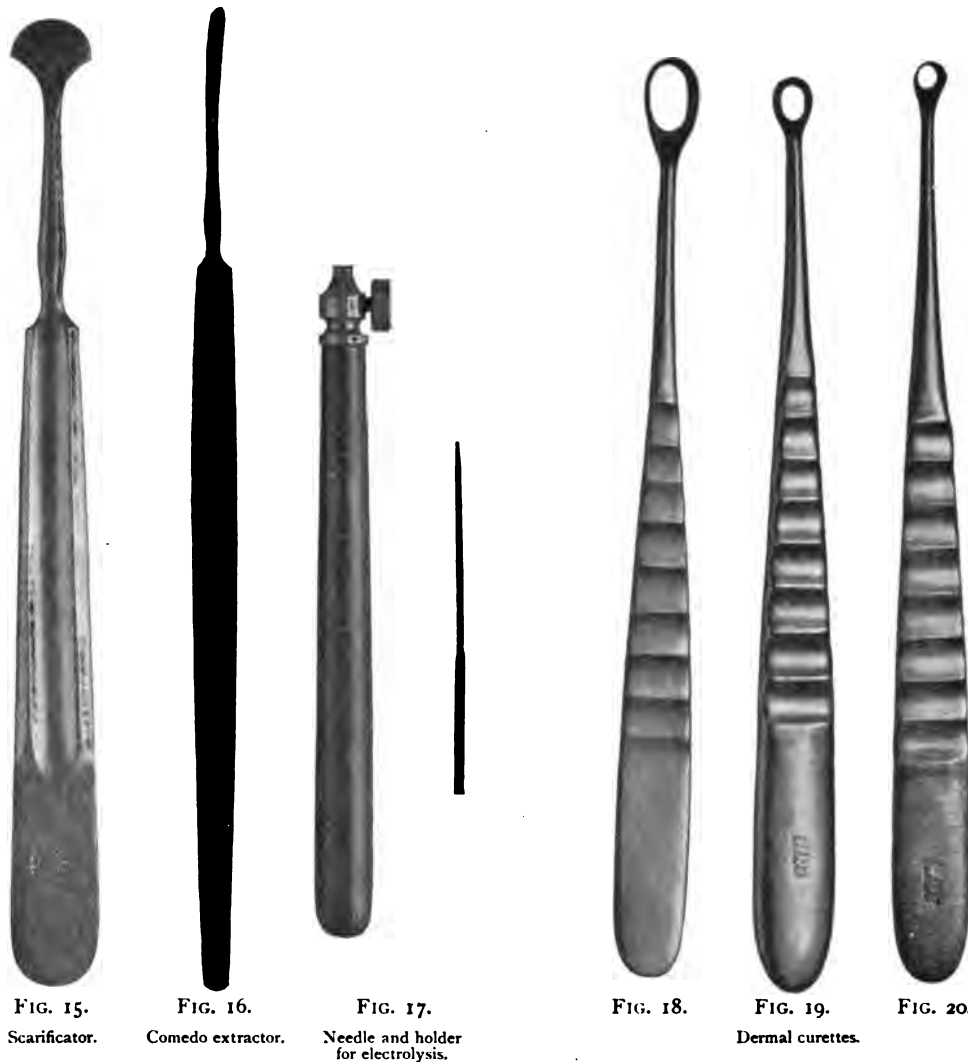
Ergot is of some use in acne, purpura, etc., probably on account of its action upon the unstripped muscular fibers of the skin and the uterus.

Electrolysis is an agent of great value in the treatment of certain affections of the skin (hirsuties, warts, nævi).

The instruments required are a galvanic battery, a milliampere-meter, forceps, needles, and holder. Of these latter I have found the one shown in Fig. 17 most convenient. Fine irido-platinum needles may be employed, but the ordinary broaches used by watchmakers are much cheaper and just as good. The amount of current that can be borne varies from 2 to 10 milliamperes, depending on the sensitiveness of the patient and the part that is treated. The needle is attached to the negative pole of the battery, and a suitable sponge-holder to the positive one. The hair to be removed is grasped with the epilating forceps, care being taken that no traction is made upon it. The needle is then carefully passed into the follicle along the side of the hair-shaft, and the skin, if possible, is not to be pierced. The depth to which the broach is introduced varies from 2 to 6 lines, dependent on the depth of implantation of the hair. The circuit is then completed by the patient pressing the sponge-holder against his hand or some portion of his body. In a few moments a fine foam appears around the needle, and the electrolytic action has commenced. It is allowed to go on until the hair is loosened in its sheath and comes away without traction by the forceps. The sponge-electrode is then removed and the needle withdrawn. Care must be taken to introduce the needle before, and remove it only after, the circuit is broken, so as to avoid giving the patient a shock. From 10 to 50 hairs can be readily removed at a sitting. The success of the operation depends on the electrolytic destruction of the papilla of the hair. This will not always be effected, and we must expect 10 to 25 per cent. of the hairs that are treated to grow again.

Certain instruments other than the ordinary surgical ones are daily used by the dermatologist. Sharp dermal curettes of various sizes, and fenestrated to allow the escape of collected material, are employed for erosion of the surface (acne, epithelioma). Epilating forceps for the removal of hairs (perifolliculitis, trichophytosis) should have broad, flat blades and easy springs. Spoon-shaped comedo extractors,

the plugs being expressed by lateral pressure, are far preferable to the old-fashioned watch-key kind. Grappling forceps are useful to seize small portions of tissue, tumors, etc., that are to be ablated. Keyes's cutaneous punch is employed to remove small circular areas of skin (nævi, powder grains). Linear scarification is done



with the cutisector (rosacea). A glass pleximeter is useful to express the blood from the skin, rendering new growths therein more visible (lupus vulgaris). Dental burs are employed to destroy localized new growths (lupus nodules). A small spear-shaped spud is useful for opening acne pustules, small dermic abscesses, etc. (See Figs. 15-28, pp. 50, 51).



FIG. 21.
Grappling forceps.

FIG. 22.
Epilating
forceps.



FIG. 23.
Spear-shaped spud.



FIG. 24.
Keyes's cutaneous
punch.



FIGS. 25, 26, 27, 28.
Dental burs.

CLASSIFICATION.

OUR knowledge of the etiology and pathology of cutaneous diseases is still too incomplete to permit of a perfect classification. Yet an imperfect one is better than none at all, for it groups the various maladies according to relationship of some kind, and enables us to take a general survey of the ground to be traversed. The classification of Jessner, slightly modified, is perhaps the most useful.

CLASS I. FUNCTIONAL DISORDERS.

- | | |
|--------------------------|------------------------------|
| 1. <i>Sensory</i> : | Bromidrosis, |
| Pruritus. | Chromidrosis, |
| 2. <i>Motor</i> : | Uridrosis. |
| Dermatospasmus. | (b) Of the sebaceous glands: |
| 3. <i>Secretory</i> : | Seborrhea, |
| (a) Of the sweat-glands: | Comedo, |
| Hyperidrosis, | Milium, |
| Sudamina, | Steatoma, |
| Anidrosis, | Asteatosis. |

CLASS II. CIRCULATORY DISORDERS.

- | | |
|------------------------|-------------------------|
| 1. <i>Hyperemias</i> : | 3. <i>Ædemas</i> : |
| (a) Arterial: | Urticaria, |
| Erythema. | Prurigo. |
| (b) Venous: | 4. <i>Hemorrhages</i> : |
| Livedo. | Purpura, |
| 2. <i>Anemias</i> : | Scorbutus. |

CLASS III. INFLAMMATIONS.

- | | |
|--|---------------------------|
| 1. <i>Of the corium and subcutis</i> : | Chromophytosis, |
| (a) Superficial : | Scabies, |
| Morbilli, | Phtheiriasis, |
| Rubeola, | Eczema, |
| Scarlatina, | Erythema multiforme, |
| Variola, | Herpes, |
| Vaccinia, | Zoster, |
| Varicella, | Dysidrosis, |
| Lichen planus, | Pemphigus, |
| Lichen ruber, | Dermatitis herpetiformis, |
| Favus, | Impetigo contagiosa, |
| Trichophytosis, | Dermatitis exfoliativa, |
| Pityriasis rosea, | Psoriasis. |

CLASS III. INFLAMMATIONS (*Continued*).

- | | |
|---|---|
| <p>(b) Deep-seated : Dermatitis, Erysipelas, Erythema nodosum.</p> <p>(c) Suppurative : Phlegmon, Furunculosis, Carbuncle,</p> <p>(d) Granulomatous : Tuberculosis, Lupus, Syphilis,</p> | <p>Lepra, Mycosis fungoides, Lupus erythematosus, Rhinoscleroma, Actinomycosis.</p> <p>2. <i>Of the glands :</i> Hydradenitis, Acne, Rosacea, Folliculitis.</p> <p>3. <i>Of the nails :</i> Onychomycosis.</p> |
|---|---|

CLASS IV. HYPERTROPHIES.

- | | |
|---|---|
| <p>1. <i>Of the epidermis :</i> Ichthyosis, Keratosis, Callositas, Clavus, Verruca, Cornu cutaneum, Condylomata acuminata.</p> <p>2. <i>Of the connective tissue :</i> Elephantiasis.</p> | <p>3. <i>Of the glands :</i> Molluscum contagiosum.</p> <p>4. <i>Of the hairs :</i> Hypertrichosis.</p> <p>5. <i>Of the nails :</i> Onychauxis.</p> <p>6. <i>Of the pigment :</i> Lentigo, Chloasma.</p> |
|---|---|

CLASS V. NEW GROWTHS.

- | | |
|--|---|
| <p>1. <i>Of the connective tissue :</i> Cicatrix, Keloid, Fibroma, Myxoma, Lipoma, Neuroma, Xanthoma, Sarcoma.</p> | <p>2. <i>Of the muscular tissue :</i> Myoma.</p> <p>3. <i>Of the vessels :</i> Angioma, Lymphangioma.</p> <p>4. <i>Of the glands :</i> Adenoma, Carcinoma.</p> |
|--|---|

CLASS VI. ATROPHIES.

- | | |
|---|---|
| <p>1. <i>Of the cutis and subcutis :</i> Atrophia senilis, Atrophia maculosa et striata, Xeroderma, Scleroderma.</p> <p>2. <i>Of the pigment :</i> Albinismus,</p> | <p>Vitiligo, Canities.</p> <p>3. <i>Of the hair :</i> Alopecia, Alopecia areata.</p> <p>4. <i>Of the nails :</i> Atrophia unguis.</p> |
|---|---|

CLASS I.

FUNCTIONAL DISORDERS.

FUNCTIONAL disorders, without recognizable anatomical change, and affecting sensibility, motion, and secretion, occur in the skin. The changes of sensibility may consist of hyperæsthesia, anæsthesia, or paræsthesia; the touch, temperature, or pressure sensation may be involved; or pain may be the only symptom. They are not usually independent diseases, but are caused by other local or general maladies. Dermatalgia and anæsthesia occur, though very rarely, as idiopathic cutaneous affections, and pruritus is the only functional change of sensibility that demands more detailed attention. The functional alterations of secretion are more important, affecting both the coil and the sebaceous glands. They include the various alterations of the sweat secretion, known as hyperidrosis, anidrosis, bromidrosis, chromidrosis, etc., and those of the sebaceous secretion—seborrhea, asteatorrhea, and comedo.

PRURITUS.

Definition.—A functional disease of the skin, characterized by itching without any primary cutaneous lesion.

Symptoms and Course.—Itching occurs as a symptom in various cutaneous maladies, as well as in a number of other general and local affections; but it is sometimes a pure neurosis, occurring idiopathically, and showing no objective signs. Certain secondary effects, in the shape of excoriations, blood-crusts, pigmentation and induration of the skin, and even eczema, may be present; but they are caused by the patient's finger-nails, and are not an essential part of the disease. They appear on the portions of the body most accessible to the sufferer, and they are not seen when scratching is prevented, however violent or extensive the pruritus may be. It is unfortunate that Hebra, who first described the malady, did not give it a name different from that of its only symptom.

Pruritus universalis is the severest form of the malady, and causes great suffering. Not the entire body, however, is affected at one and the same time: the itching attacks various portions of the skin in turn. Pruritus senilis is a not infrequent affection in the old. Pruritus hiemalis, first described by Dühring, is apparently dependent on the weather, being commonest in northern climates, regularly getting better or disappearing as the warm weather comes on, and beginning again in the winter. Pruritus æstivus is the opposite to this, and is seen only in summer. Some

cases of the so-called "prairie itch" or "Texas mange" are cases of pruritus; but the designation includes cases of parasitic disease also, more especially of scabies.

Pruritus localis may involve any portion of the body, frequently affecting the face and scalp, and sometimes the palms and soles; but it more often occurs as pruritus genitalium, in the genito-anal region of both sexes, and is a severe and distressing affection. Pruritus vulvæ may prevent the patient from attending to her duties and unfit her for society. Pruritus ani is very common, but is most frequently secondary to various rectal diseases.

The itching may be continuous, and then usually varies in intensity at different times and in different portions of the skin. More commonly it is paroxysmal, coming on more especially under the influence of mental emotions or sudden changes of temperature. Frequently it is most severe at night, when the patient is in bed. It causes an impulse to scratch that is almost irresistible. The finger-nails, or, if these are insufficient, foreign bodies—rough cloths, hair-brushes, sticks, etc.—are employed to rub and scratch the skin, which is often torn, lacerated, and covered with blood before relief is obtained. The attacks prevent sleep; the patient emaciates, and his general health is impaired. Occurring in the daytime, neither modesty nor the presence of others can restrain the *impetus scabendi* (the "impulse to scratch"); and the affliction has driven some of these sufferers to suicide.

Etiology.—Many, perhaps most, cases of so-called pruritus are symptomatic of some local or general disease, and not independent affections. Digestive disturbances, diabetes, jaundice, and Bright's disease are the commonest causes of general pruritus; while the local attacks are due to many various causes, among which may be mentioned vaginitis, vulvitis, and utero-ovarian disease in general, balanitis and urethritis, rectal fissures and hemorrhoids, ascarides, etc. Pruritus senilis is dependent on senile atrophy of the skin, with diminution of the sebaceous secretion. In most cases of true pruritus, however, the etiology is unknown.

Pathology.—No pathological changes have been found in the disease, and it is classed as a true neurosis.

Diagnosis.—The other itchy diseases of the skin—prurigo, scabies, phtheirlasis, urticaria, etc.—all have objective symptoms which enable them to be readily distinguished from pruritus, which has none. Even prurigo, the disease with which it is most liable to be confounded, has its primary papules and infiltrated skin, and begins at a very early age and continues through life.

Prognosis is doubtful and often bad. Very frequently no underlying cause can be found, and the senile changes of the skin are permanent.

Treatment.—The great number of remedies recommended in this disease is a sure index of the inadequacy of our attempts to cope with it. Especial attention must be paid to the gastro-intestinal tract. The bowels must be kept regular with salines, and coffee, liquor, and all indigestible food must be forbidden. General hygiene, and especially proper exercise, must be insisted on. Tonics—iron, qui-

nine, cod-liver oil, and nux vomica—are occasionally useful. The bromides in large doses sometimes relieve the itching; and salicylate of sodium, in daily doses of from 30 to 60 grains, has occasionally done good. Saalfeld recommends hypodermic injections of $\frac{1}{8}$ grain of pilocarpine.

No. 10. Tar Spirit.

R̄ Ol. cadini
Spts. vini aa. p. e.

No. 11. Carbolic Lotion.

R̄ Acidi carbolici 2 parts
Spts. vini 10 "
Glycerini 90 "

No. 12. Menthol Ointment.

R̄ Menthol 1 part
Ol. olivæ 3 parts
Adip. lanæ 24 "

No. 13. Veratria Ointment.

R̄ Veratriæ 1 part
Ungt. simpl. 150 parts

Medicated baths of sulphur, tar, or bran occasionally do good. A good way is to sponge the affected areas with tar spirit (No. 10, p. 56), and then immerse the body for one half to one hour in a warm bath. The tar must not, however, be used over the entire body for fear of poisoning. The local anesthetics are perhaps our most valuable remedies. Carbolic acid may be employed as a lotion (No. 11, p. 56), or menthol in solution with alcohol or as a salve (No. 12, p. 56). Liquor plumbi subacetatis (3i to water, 3i) and cocaine in 5- to 20-per-cent. vaseline ointment may also be employed. Bulkley recommends the inunction of chloral-camphor, a thick liquid obtained by triturating together equal parts of the two drugs; and Joseph cured some cases by painting the surface daily with the tincture of benzoin. Others have employed veratria with success in pruritus vulvæ (No. 13, p. 56), using both in ointment and internally in pills of $\frac{1}{120}$ of a grain. In obstinate cases the Pacquelin may be used, cauterizing the parts superficially; and even excision of the affected parts has been recommended. Unfortunately many cases resist all these measures.

There are no functional disorders of the skin in the motor sphere of any importance. The arrectores pilorum are the only muscular structures. Their temporary contraction under the influence of cold or of the emotions causes the erection of the hairs and the elevation of the epidermis around them, being the condition known as cutis anserina or goose-flesh. Functional disorders of the glandular structures are, however, of more importance. The sweat may be increased in amount (hyperidrosis) or diminished (anidrosis) or changed in quality (bromidrosis, chromidrosis, uridrosis, hematomidrosis).

HYPERIDROSIS.

Definition.—A functional disease of the coil glands, consisting of excessive secretion of the sweat.

Symptoms and Course.—Sweating occurs physiologically when the body is exposed to heat or when muscular exertion is undertaken. Pathologically it is a symptom in many abnormal conditions, as of collapse, shock, and fainting, and in asthma, rickets, exophthalmic goitre, rheumatism, malaria, etc., and in the defervescence of fevers. It is then a hyperidrosis universalis, affecting the whole body, and frequently coming on in paroxysms at night. The excessive secretion macerates the epidermis and frequently causes inflammation of the skin in localities where the approximation of opposing folds favors retention of the fluid and debris (eczema intertrigo). Miliaria and sudamina are common complications, as are also the mycotic diseases (chromophytosis, trichophytosis, etc.). Being a symptomatic affection in most cases, its special consideration need not be entered upon here.

Hyperidrosis localis is more essentially a cutaneous affection. It is very frequent, especially on the head, hands, and feet. It may be unilateral or bilateral, or it may affect certain special areas of the skin. Hyperidrosis pedum is perhaps its commonest and most troublesome form. The feet are continually wet and cold; the socks are soaked; the skin is macerated, and may even become excoriated or ulcerated. Confined in the shoes, the fatty material of the sweat and epidermic cells decomposes, and a peculiar nauseating odor is caused that may be perceptible to others, and, in the worst cases, may render the patient unable to go into society (bromidrosis). Walking is sometimes so interfered with that the sufferer is practically bedridden.

Hyperidrosis manuum is also quite common, and is almost as great an affliction. The hands are perpetually moist and greasy; they stain every article that they touch, and gloves can hardly be worn at all. Sometimes the secretion is so abundant that the sweat drips from the finger-tips when the hands are at rest. The affection occurs most commonly in nervous and anemic women. Hyperidrosis axillæ and hyperidrosis genitalium frequently predispose the skin of the affected parts to intertrigo and eczema marginatum. Like all the other forms of the disease, they are commoner and more annoying during hot weather.

Etiology.—The cause of the excessive sweating, when not one of the above-mentioned diseases, is often undiscoverable. Some derangement of the sympathetic nervous system is probably at the bottom of it. Uncleanliness certainly plays no part. Mental excitement frequently seems to start the flow. I have noticed that the workmen in the aniline factories, who cleanse their hands of the dyes with chloride of lime, suffer from severe hyperidrosis of the hands; the affection stops, however, as soon as they cease to use the lime.

Pathology is practically wanting. The secreted sweat is apparently normal, and Robinson has examined many sections of hyperidrotic skin without finding anything abnormal about the sweat-glands or their epithelium.

Diagnosis never presents any difficulties, though the underlying cause is sometimes impossible to find.

Prognosis should be guarded; many cases are very intractable. Death has occurred, apparently from the exhaustion caused by severe hyperidrosis alone, in the case of an old man reported by Myrtle.

Treatment.—There is, of course, no truth in the popular idea that checking of the sweat secretion, like driving away an eruption, is liable to occasion internal disease. The cause must be treated when it can be found. The use of water, macerating the already swollen epidermis, must be limited to the smallest necessary amount. The clothing should be woolen, and very frequently changed; twice a day is none too much for the socks in hyperidrosis pedum. Sleeping between woolen blankets rather than between sheets, and with the least amount of covering that can be borne, will tend to lessen the distressing attacks of sweating that occur during the night in various diseases.

Of internal remedies there are recommended the usual large number when dealing with a more or less intractable disease. The only ones that I have found of value, in addition to the general and the bitter tonics, are: atropin, given hypodermically in doses of $\frac{1}{100}$ to $\frac{1}{50}$ of a grain, and increased up to the point of toleration; ergot in 3ss doses twice daily; and aromatic sulphuric acid, 10 to 20 drops three times a day. Crocker recommends sulphur, 3i in milk twice a day, very highly; I have had no experience with it.

No. 14. Salicylic Dusting Powder.

R Ac salicylic 3 parts
Talc 7 "
Amyli 90 "

No. 15. Alum Dusting Powder.

R Aluminis
Ac. salicylici
Amyli aa. p. e.

No. 16. Quinine Dusting Powder.

R Quin. sulph. 1 part
Amyli 5 parts

External treatment should consist of washing the affected area with vinegar, cologne water, or alcoholic solutions of naphthol 10 per cent., tannin 5 per cent.; or salicylic acid 1 per cent., followed, after thoroughly drying the parts, by a dusting powder (No. 14, p. 58). The tincture of belladonna, diluted with equal parts of water, is a good application in some cases; there need be no fear of absorption and poisoning if fissures or excoriations are not present. Where the abnormal sweating is limited to a small area, a 5-per-cent. solution of chromic acid painted once or twice over the part has done me good service; but it should only be used about once in two weeks.

In hyperidrosis pedum the feet should be washed daily with a decoction of white-oak bark, then carefully dried, and one of the alcoholic solutions recommended above applied. The parts should then be well dusted with an astringent powder

(No. 15, p. 58), pledgets of cotton being placed between the toes. Hebra's celebrated treatment consists in laying diachylon ointment spread on strips of linen on the feet and between the toes. The dressing must be changed daily for two weeks without washing, the parts being simply wiped dry with a cloth. Desquamation of the epidermis occurs, and with it a diminution of the amount of the sweat. Morrow recommends foot-baths of the extract of *Pinus Canadensis*, followed by one of the various dusting powders.

Hyperidrosis manuum is best treated by an alcoholic alum or tannin solution. G. H. Fox recommends an alcoholic solution of quinine, 1 to 100, very highly. Any of these may be followed by a quinine dusting powder (No. 16, p. 58).

Hyperidrosis genitalium may be treated by washing the parts with a decoction of white-oak bark, followed by powder. A suspensory bandage must be worn by the male; and in either sex it is advisable to use bandages and layers of absorbent cotton to prevent the affected areas coming in contact. In hyperidrosis axillæ the dusting powder may be worn in small linen bags slung round the shoulders or attached to the clothing.

ANIDROSIS is not a definite disease of the skin, but is a diminution in the amount of the sensible perspiration below the normal. It occurs in various diseases; in fevers, diabetes, and various maladies of the brain and spinal cord, as well as in ichthyosis, scleroderma, prurigo, and some forms of eczema and psoriasis. Treatment must be directed to the malady of which it is a symptom. Steam and Turkish baths, general tonics, exercise, etc., do good; and pilocarpine hypodermically in small doses may be tried.

BROMIDROSIS.—The exhibition by the sweat of a peculiar and usually disagreeable odor is not a distinct malady, but is either symptomatic of other affections or is due to the decomposition of the sweat under the influence of bacterial life. Symptomatic general bromidrosis occurs in some of the exanthemata and fevers where the sweat has a distinctive odor (variola, typhus). A few drugs, such as sulphur, iodine, and musk, also cause it. But the commonest variety is the local bromidrosis occurring in connection with hyperidrosis of the axillæ, the genitals, and more especially of the feet. Hebra has proved that even in the worst of these cases the sweat is odorless when excreted; and it has been shown that the fetor that supervenes is due to the growth of the *Bacterium fetidum* in the exuded sweat and sebum.

The odor of bromidrosis is a heavy and peculiar one, and has been compared by Crocker to that of moldy cheese. The clothing covering the affected part, more especially the socks and shoes, is its source, rather than the skin itself. This latter is tender, red, and excoriated; or the epithelium may be swollen by the excessive secretion, and it becomes sodden and white. Its cause is most often the organism mentioned above. But hyperidrosis is usually associated with it, and our custom of enveloping the feet in an impervious leather covering favors its development.

The treatment is essentially that of hyperidrosis. Frequent bathing and change

of clothing are essential. Thin's plan is effective, and consists in first soaking the clean socks in a solution of boric acid and letting them dry. The feet are then well powdered with the acid, which is also dusted freely in the socks and shoes. A solution of the permanganate of potassium, 1 to 3 grains to the ounce, and applied to the feet several times a day, is also useful. Chromic acid in 5-per-cent. solution may be applied cautiously once in two or three weeks. In the German army it has been found useful, especially when on the march, to anoint the feet with suet containing 2 per cent. of salicylic acid, and then to wrap up the feet in bandages soaked in the same instead of using stockings. Crocker has obtained good results from the internal use of sulphur, as in hyperidrosis.

CHROMIDROSIS or colored sweating is an extremely rare malady. The reported cases have occurred mostly in hysterical women, and some of them have been found to be the result of imposture. The very existence of the affection has been doubted, but a sufficient number of cases have been seen by competent observers to prove that it occurs. Blue, yellow, brown, and red sweat have been seen, but the source and nature of the coloring-matters are not definitely known. Pyocyanine, the coloring-matter of blue pus, and indigo, have been thought to be the cause of the cases of blue sweating observed by Hofmann, Le Roy de Méricourt, and T. C. Fox. The yellow and the black colors respectively of the secretion in the cases of Mibelli and Kollmann were apparently due to the ingestion of chrysarobin and of phosphate of iron. On the other hand, Babesieu and others have reported cases that were undoubtedly bacterial in origin. In most instances the sweating has been confined to a very limited area, the lower eyelids being most frequently affected. The treatment attempted has been entirely useless.

URIDROSIS, or the excretion of urea with the sweat, is simply an exaggeration of a normal condition, that compound being always present in the secretion. It occurs in certain general conditions, as in cholera, but is more commonly seen in uremia, where the amount of urea excreted by the coil glands may not only give the sweat a urinous odor, but may be deposited in the form of minute white crystals on the surface of the skin.

HEMATIDROSIS or bloody sweat is sweat containing a number of red blood-cells that have escaped from the vessels by diapedesis. This extremely rare affection occurs in persons suffering from hemophilia, and is then associated with hemorrhages and blood-extravasations in the various organs and tissues. The subjects affected have always been hysterical women, and the process has been regarded as a vicarious menstruation. The case of Louise Lateau with "bleeding stigmata" is well known.

SUDAMINA.

Synonym.—Miliaria crystallina.

Definition.—Retention cysts of the coil glands, appearing as discrete, pinhead-sized, translucent vesicles containing sweat.

Symptoms and Course.—The vesicles look like drops of dew upon the surface of the skin, and are usually present in large numbers. They may appear on any part of the body, but the neck, chest, and abdomen are most frequently affected. They never become pustular or coalesce or show any signs of inflammatory reaction. After persisting for a day or two they dry up; and their disappearance is followed by a slight furfuraceous desquamation.

Etiology and Pathology.—Sudamina is essentially dependent on general hyperidrosis, and is most commonly seen in diseases characterized by abundant sweating (phthisis, rheumatic fever, typhoid, etc.). Violent exercise, excessive warmth of the clothing, and exposure to moist heat will also cause its appearance. Robinson, who has carefully studied their anatomy, finds that the fluid is an accumulation of pure sweat under the corneous layer, the duct of a coil gland opening into each little cyst.

Treatment.—The treatment of sudamina is usually unnecessary, since they are most often phenomena of little importance occurring in the course of other diseases. The general treatment recommended for hyperidrosis may be employed. If they cause any annoyance a mildly astringent lotion (No. 17, p. 61) may be sponged over the affected area. The zinc-and-starch powder (No. 18, p. 61) is also useful.

No. 17. Lead Lotion.

| | |
|------------------------------|---------|
| R̄ Liq. plumbi subacet. dil. | 3 parts |
| Glycerini | 8 " |
| Aq. cologniensis | 16 " |
| Aq. destil. | 60 " |

No. 18. Zinc Dusting Powder.

| | |
|----------------------------|-------------|
| R̄ Pulv. zinci ox. | 1 part |
| Talc. venet. | |
| Amyli | aa. 4 parts |

SEBORRHEA.

Synonym.—Steatorrhea.

Definition.—Seborrhea is a functional disease of the sebaceous glands, characterized by an excessive and abnormal secretion of sebum, which appears as an oily coating or as crusts upon the skin.

Symptoms and Course.—Seborrhea occurs anywhere where there are sebaceous glands, and is commonest upon the scalp, the face, the genitals, and the anterior and posterior surfaces of the chest. The affection may be a slight one, limited in area, and readily removed; or it may be extensive and severe, and very rebellious to treatment. We distinguish two separate clinical forms, in accordance with whether the sebaceous material that accumulates upon the skin is fluid and oily, or solid, forming crusts and scales.

Seborrhea oleosa is the more frequent form of the affection, especially in the negro race, where it is so frequent as to be almost the normal condition. The skin is greasy to the touch, and glistening, and the fatty material may even be abundant enough to accumulate as minute drops of oil. It occurs on the nose and face, and bald scalps are rendered more shining by its presence. The dust and coal-soot of

the atmosphere settle on the oily coating and stick there, giving to the skin a dirty gray or blackish appearance. The ducts of the sebaceous glands are usually markedly dilated, and may be seen large and patulous, or plugged with comedones.

Seborrhea sicca is also a common condition, affecting both the hairy and the non-hairy regions of the body. It is of especial frequency upon the scalp, and is the common cause of premature baldness. It appears as thin, white, and greasy scales, which become yellowish or brownish as they desiccate and become dirty. The skin beneath is grayish white and anemic, and when excessive accumulation of the scales causes irritation, a mild eczematous inflammation is set up.

Seborrhea may in rare cases be universal. This is physiological in the new-born infant, where the half-dried sebaceous secretion forms the vernix caseosa. The superabundant secretion usually continues in the scalp during the first year of life, and where there is not sufficient cleanliness accumulates in thick dark-yellow or brownish masses, the so-called "cradle crust." But in most cases seborrhea is partial and affects only a limited area of the skin.

Seborrhea capitis is the commonest form of the malady, and, as the chief cause of baldness, one of the most important. The excessive glandular secretion accumulates as more or less fatty, dirty yellowish-white scales, occupying circumscribed

areas or diffused over the entire scalp. The hairs are fatty and sticky, and become matted together, and want of cleanliness may lead to a tangling up of the hair with sebum and dirt. Later on there occurs excessive cornification and desquamation of the epithelial cells; and the mingled sebum and scales are cast off as dandruff, the white scales of which powder the patient's clothes. Being unaccompanied by any subjective sensation further than a moderate itching, this condition is usually allowed to persist for years without treatment, and it is only when the final stage sets in that medical aid is sought. The



FIG. 29.—Seborrhea capitis.
From photograph in the author's collection.

hairs then lose their luster and get loose; the follicles begin to atrophy and the hair to fall out. The baldness begins upon the vertex, or above the forehead, and may go so far that only a fringe of hair is left around the nape of the neck and the ears. The denuded scalp is shiny, and attached firmly to the skull beneath. More rarely

than upon the head a similar process takes place in the mustache, beard, and eyebrows. In some of these cases there is more or less hyperemia; epithelial proliferation is a more prominent factor; the itching is more intense; and they stand on the boundary line between pityriasis and the malady under consideration.

Seborrhea faciei and seborrhea nasi are common localizations of the disease, and appear both in the oily and the dry form. In the former the alæ nasi and the cheeks are the parts most commonly affected. The skin is covered with a layer of oily matter, mingled with more or less dirt from the atmosphere. The mouths of the glands are large and prominent, and comedones, acne papules, and rosaceous patches are often present. In the dry form the sides and tip of the nose and the forehead are covered with small, dark-yellow, fatty, adherent scales, and the skin beneath is frequently irritated.

Seborrhea genitalium is common in both the male and the female, more especially when cleanliness is not observed. The sebaceous glands of the labia and fossa of the glans are large and numerous; sebum accumulates and decomposes, giving rise to a foul and characteristic odor, and inflammation and excoriations may be the secondary results.

Etiology.—General impairment of health seems to be the main predisposing factor to the disease; it occurs most commonly in anemic and chlorotic individuals suffering from irregularities of the bowels or of the menstrual function. Nevertheless it is often seen in robust individuals, in whom we are at a loss to account for its advent.

Pathology.—The disease process in pure seborrhea is an entirely functional one, and the sebaceous glands themselves are not in any way changed. The difference between the oily and the dry form depends on personal peculiarities, and Duhring claims that brunettes most commonly have the former, while individuals of a light complexion suffer oftenest from the latter variety. Some authorities believe, with Jessner, that a low, chronic inflammatory process is present in most cases, an opinion which is supported by the atrophy of the glandular structures that finally occurs. We may follow Unna in classifying the more inflammatory forms of the affection by themselves, and considering them under the heading of seborrheal eczema, leaving the ordinary forms to represent the functional disease.

Diagnosis.—Seborrhea, more especially of the scalp, must be differentiated from eczema, psoriasis, and lupus erythematosus. As regards eczema, the seborrheal crusts are fatty, and are not composed of inflammatory exudation; and the skin beneath them is dry and white, or at the most slightly reddened, not moist, thickened, and inflamed. In psoriasis the scales are large and silvery white; in seborrhea they are smaller, grayish, and fatty. The skin of a psoriasis patch is reddened, while that of a seborrheal area is pale and anemic; and we will always in the former disease find other patches, more especially on the outer surfaces of the joints. The distinction from lupus erythematosus is more difficult, and may in some

cases be impossible. This is the less to be wondered at from the fact that, as Hebra long ago pointed out, erythematous lupus begins as a congestive form of seborrhea, and persists as such for a long time before taking on a characteristic form. But lupus erythematosus is distinctly inflammatory, the skin is thickened and infiltrated, and superficial scars result in the center of the patch as the disease progresses; moreover, it is rare on the scalp. Seborrhea, on the other hand, shows no inflammatory reaction and no scar tissue; its scales are soft and fatty, and its favorite location is upon the head.

Prognosis.—The general prognosis of seborrhea is good, though some cases are very obstinate, especially where the genitals are affected. In seborrhea of the scalp also, our opinion as to the possibility of a regrowth of hair must be a guarded one. We have no means of telling what proportion of the hair-follicles are still capable of growth. The patient should also be informed that treatment will inevitably cause an increased falling out of the hairs at first, but that none will be lost that are not loosened and ready to come out, while feeble ones will be strengthened and stimulated.

No. 19. Startin's Mixture.

℞ Magnes. sulphat. . . . 16 parts
 Ferri sulphat. . . . 1 part
 Acid. sulph. dilut. . . . 3 parts
 Infus. quassiaæ . . . ad. 30 "
 S. A teaspoonful in water, after eating.

No. 21. Tannin-Resorcin Spirit.

℞ Ac. tannic., or resorc. albissim. . . 1 part
 Ol. ricin. 1 "
 Spirit. coloniensis 50 parts

No. 23. Bronson's Mercurial Ointment.

℞ Hg ammoniati 1 part
 Hg. chlor. mit. . . . 2 parts
 Petrolati 25 "

No. 20. Resorcin Ointment.

℞ Resorc. albissim.
 Sulph. depur. aa. 1 part
 Adip. lanæ
 Ungt. simpl. aa. 8 parts

No. 22. Tar Ointment.

℞ Ol. cadini 1 part
 Ungt. simpl. 8 parts

No. 24. Sulphur Paste.

℞ Sulphur. depur. 1 part
 Pulv. zinci ox.
 Amyli aa. 2 parts
 Petrolati 5 "

No. 25. Sulphur Ointment.

℞ Sulphur. lot. 1 to 2 parts
 Ungt. aquæ ros. 8 "

Treatment.—The treatment of seborrhea is, above all things, a matter requiring much time and great patience. The general treatment must be directed to regulation of hygiene and correction of any ascertainable fault in gastro-intestinal and uterine functions. Fresh air, abundant exercise, daily salt-water baths, and proper



TYPOGRAPHURE.

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COMEDO AND ACNE.

PLATE LV.

food are of importance; cod-liver oil is frequently indicated in anemic cases, where Startin's acid iron mixture (No. 19, p. 64) also does good service.

The local treatment consists in removing the crusts and lessening the excessive secretory action of the sebaceous glands. The former is effected by softening them by the continuous application of cloths soaked thoroughly with olive-oil, sweet-almond oil, cod-liver oil, or glycerin. If the scalp is affected, a piece of oil silk or a bathing-cap should be worn during the night to protect the bedclothes and keep the parts moist. If this is not sufficient, green soap should be employed, best in the form of the spiritus saponis kalini recommended by Hebra (No. 5, p. 43). This used as a shampoo with hot water once a day, with the oils as above described during the rest of the time, will cause most of the crusts to disappear, and so soften the rest that there is no difficulty in removing them with a soft cloth or a comb. The various sulphur, resorcin, and tannin lotions and salves can then be applied to the affected skin (Nos. 21, 24, 25, p. 64).

In seborrhea capitis the above preliminary treatment should be employed to remove the crusts, and, since they accumulate quite rapidly, it must be repeated once or twice a week during the entire course of the treatment. It is never necessary to cut the hair; by carefully parting it and using a hard-bristle brush dipped in the ointment or lotion, and brushing it into the scalp, successive areas of skin may be treated until the whole has been covered. Sulphur in 5- to 10-per-cent. ointment is our most valuable remedy, and resorcin is almost as effective. I have found the combination (No. 20, p. 64) very useful. As the secretion diminishes, tannic acid or resorcin in alcoholic solution is preferable (No. 21, p. 64). In obstinate cases tar is required (No. 22, p. 64), and the ointment recommended by Bronson is very serviceable (No. 23, p. 64).

For seborrhea of the face the spiritus saponis kalini is too irritant, and the crusts must be removed by the use of one of the medicated soaps, those of ichthyol, resorcin, and sulphur being most employed. A 5-per-cent. sulphur paste (No. 24, p. 64) or the resorcin ointment (No. 20, p. 64) may be applied.

In seborrhea of the body, sulphur, 10 to 30 grains to the ounce of adeps lanæ, is most useful. Seborrhea of the genitals is treated by keeping the parts clean with ordinary soap and warm water, followed by the application of a slightly astringent dusting powder (No. 15, p. 58; No. 18, p. 61).

The treatment of seborrhea oleosa differs in no way from that of the dry form of the disease, save that the preliminary treatment for the removal of the crusts is not required.

COMEDO.

Synonyms.—Blackhead, *Mitesser* (Ger.), *acné ponctuée* (Fr.).

Definition.—A disease of the sebaceous glands, characterized by pin-point- or pinhead-sized papules, with minute bluish or black centers.

Symptoms and Course.—Blackheads are present to some extent in all skins, and are frequently numerous enough to form an annoying deformity. This is especially the case at the time of puberty, when the sebaceous follicles participate in the



FIG. 30.—Comedo.
Case of Dr. J. F. Aitken.

general glandular development of the skin that takes place at that time. The comedones appear as minute blackish or bluish points, each one of which marks the situation of the mouth of a gland. They are almost always accompanied by more or less seborrhea, and the irritation of the retained secretion frequently causes an inflammatory acne. Their seat is most often on the face, the forehead, nose, and chin being more especially affected; but they occur also in the lobe of the ear and behind it, and on the nape of the neck. The back is sometimes extensively affected, and they have even been found on the penis.

Etiology.—We do not know why comedones develop; but dirt, formerly supposed to be the cause of their appearance, has nothing to do with it. Uncleanly people and those whose avocations expose them to dirt and

dust are perhaps less liable to them than those of unexceptionable personal habits and refined occupations. Thick, muddy skins with well-developed and patulous sebaceous glands, and with a tendency to seborrhea, show them most frequently. Anemia and chlorosis, and the general causes of seborrhea, are undoubtedly of influence in their formation.

Pathology.—The black plug which closes the dilated orifice of the sebaceous gland consists of masses of epithelial cells and detritus, inspissated sebum, cholesterol crystals, and minute lanugo hairs. The little parasite known as the *Acarus* or *Demodex folliculorum* is frequently found in the mass; but it is not the cause of the affection, being non-pathogenic in man, though in the dog it causes what is termed follicular mange. The color of the comedo is not due to the accumulation

of dust from the atmosphere, as was formerly supposed; Unna has clearly demonstrated that it is caused by a peculiar black, blue, or brown pigment.

Diagnosis needs no consideration. Milium is closely allied to comedo, but has no central duct closed with the characteristic black plug.

Prognosis is good as to the immediate removal of the disfigurement; but the comedones frequently return with an annoying obstinacy, and some cases are not permanently curable.

Treatment consists in removing the cause, and more especially the seborrhea that is so frequently present. Fresh air, sea-bathing, tonics, and other hygienic measures are useful. Local treatment must begin with the use of plenty of hot water and soap, and an alkaline lotion, such as a 5-per-cent. solution of bicarbonate of soda, to soften the plugs. The comedones can then be removed with the expresser. The old-fashioned watch-key and instruments fashioned like it are not appropriate; they injure and bruise the skin, become clogged very rapidly, and cannot be kept clean. Blunt-edged, curette-shaped instruments (Fig. 16, p. 50), by means of which lateral pressure can be exerted on the ducts of the glands and the plugs expressed, are much better. The rounded handle of the ordinary metallic pocket-case instruments makes a very useful comedo extractor when none other is handy. The after treatment consists of frequent hot ablutions and the use of an alkaline soap to prevent, if possible, the inspissation of the sebum in the ducts. A sulphur ointment (No. 25, p. 64) is also useful.



FIG. 31.—Comedo gigantea.
From photograph in the author's collection.

MILIUM.

Synonyms.—*Grutum*, *Hautgriesz* (Ger.), *acné miliaire* (Fr.).

Definition.—Milium consists in the formation of small, hard, round, whitish, non-inflammatory subepidermal tumors of the skin.

Symptoms and Course.—The small, pearl-white, millet-seed-sized elevations that are characteristic of the disease may occur anywhere where there are sebaceous glands, but are found most frequently on the face, in the region of the eyelids, temples, and cheeks, and on the penis and scrotum. There may be only one or

two, but frequently they are very numerous. They occur at all ages, but are most common during the first two years of life.

Etiology.—The cause of milium is similar to that of comedo; they are retention cysts caused by the obliteration of the ducts of the sebaceous glands. We do not know why or under what circumstances this obliteration occurs.

Pathology.—The cysts are situated in the corium, and are covered with a layer of epidermis that seems to be thinned out by pressure. Their contents are sebaceous matter, with epithelium-cells and cholesterin crystals. In rare instances they become infiltrated with lime salts, forming cutaneous calculi. Once formed, they remain stationary for years, and are obnoxious solely on account of the deformity that they occasion.

Diagnosis.—Milium is distinguished from comedo in that it has no dilated gland duct, and no blackhead plugging it. The seborrhea and acne that so frequently accompany comedo are also absent. It can hardly be confounded with xanthoma, which occurs later in life and never in children, is yellow in color, soft in consistence, and cannot be squeezed out after incision.

Prognosis is good; the malady is a purely local one, and can be readily removed.

Treatment.—This consists in incising the epidermis over each tumor, and squeezing or shelling it out. To obliterate the acinus and prevent reaccumulation of the sebum, Piffard's recommendation to touch the inside of each follicle with tincture of iodine, or that of Hardaway to use the electrolytic needle in the way recommended for the electrolysis of hairs, may be followed.

SEBACEOUS CYST.

Synonyms.—Steatoma, wen, *Balggeschwülst* (Ger.), *loupe* (Fr.).

Definition.—Encapsulated cystic tumors containing sebaceous matter, and situated in the corium or subcutaneous connective tissue.

Symptoms and Course.—Wens appear as rounded or flattened, freely movable tumors of the skin, covered with the epidermis. Their size varies greatly; the smallest are not larger than millet seeds, while the larger ones may be as big as an egg or even an orange. Most often they are soft, their contents being semifluid; but they may be harder, more especially if calcareous infiltration has occurred. They may appear anywhere on the body where there are sebaceous follicles; their favorite location is the scalp, but the face, the scrotum, and the back are not infrequently affected. Growing very slowly, they usually remain quiescent for years after attaining a certain size; and, since they give rise to no subjective symptoms at all, they are obnoxious only on account of the deformity that they cause. Wens are often single, and it is rare to find more than a few on one individual. They sometimes terminate spontaneously by suppuration and ulceration.

Etiology.—Wens may be considered as developments of the affections previously considered, milium and comedo. They arise from the obliteration of the duct of a sebaceous gland, with accumulation of the secretion that continues to be formed within it.

Pathology.—The tumors have a distinct and firm cyst wall, and soft, cheesy, and semifluid or harder yellowish-white contents. These latter are often fetid, and consist of sebum, epithelial cells, cholesterin crystals, and an occasional lanugo hair. Cheesy and calcareous degeneration frequently occurs, and the thickening of the cyst wall is evidently due to the pressure of the sebaceous matter in its cavity. To this cause also is to be attributed the atrophy of the hair-follicles and the falling of the hair on the surface of the tumors.

Diagnosis.—Fatty tumors are the only growths likely to be mistaken for wens; but they are situated most often on the back, buttocks, and extremities, and are distinctly lobulated, while wens are generally located on the scalp and neck, and are of even consistency throughout.

Prognosis is good; there will be no return of the tumor if the cyst wall is removed. Carcinoma has occurred after operation, however, as in the case that Bryant reported.

Treatment.—Excision is the only remedy. The entire cyst should be dissected out whole if possible; if the tumor be ruptured or cut into, the wall should be seized and carefully removed afterward. If operation is to be avoided, the contents of the sac may be expressed through the duct of the gland if it is still patent, or through a small artificial opening, and the cavity afterward injected with tincture of iodine.



FIG. 32.—Sebaceous cyst.
From photograph in the author's collection.

ASTEATOSIS.

Definition.—An abnormal diminution in the amount of the sebaceous secretion.

Symptoms and Course.—The skin, being deficient in the fatty matter that normally renders it soft and pliable, is dry, harsh, inelastic, and readily fissured. The hairs are dry and lusterless, and finally fall out. The affection may be general or partial, as well as idiopathic or symptomatic. Idiopathic asteatosis is very rare, but symptomatic partial or general asteatosis is commoner, occurring in many diseases.

Etiology.—Symptomatic asteatosis occurs in various constitutional diseases, as in ichthyosis, hereditary syphilis, cancer, diabetes, and leprosy; it is a very common

result of senile marasmus. Local forms of the affection occur from the action of various mechanical, chemical, and physical irritants. It may originate in exposure to cold, or, as is frequently the case with washerwomen, in the excessive use of water and alkaline soaps. Alcohol and alkaline solutions also cause it.

Prognosis.—This depends upon the cause. If this is removable the disease can be cured; but if the asteatosis is due to some serious malady, as cancer, or to a congenital deficient development of the sebaceous glands, as in ichthyosis, or to their atrophy, as in old age, the affection is incurable.

Treatment.—The cause of the asteatorrhea must be removed if possible. The excessive use of water must be avoided, and a superfatted soap substituted for the alkaline and irritant varieties. We have no means at our disposal to increase the sebaceous secretion, and we can therefore only attempt to supply its deficiency by external applications. Any of the various animal fats, almond-oil, cod-liver oil, or olive-oil may be used for the daily inunction. Ungt. aq. rosæ, cold-cream, is useful. Adeps lanæ, with vaseline (No. 26, p. 70), or the salol-menthol oil (No. 27, p. 70) may be employed with advantage.

No. 26. Simple Ointment.

R̄ Adip. lanæ 150 parts
 Petrolati 50 "
 Ol. rosæ. . . . 1 part

No. 27. Salol-Menthol Oil.

R̄ Salol
 Menthol
 Ol. oliv. āā. part. æq.

Glycerin is an excellent application, but it must be used diluted with water. Pure glycerin is not only an irritant, but it still further dries the skin by abstracting water from it. In bad cases washing must be stopped entirely for a time, and Las-sar's paste (No. 2, p. 43) should be used freely on the affected parts.

CLASS II.

NON-INFLAMMATORY CIRCULATORY DISTURBANCES.

IN this class we place the various affections that are characterized by changes in the normal distribution of blood in the skin, but unaccompanied by any inflammatory phenomena, and not followed by scaling. When they occur, as is frequently the case, as the first stage of various inflammatory affections they belong to the following class. It includes the hyperemias, anemias, cedemas, and hemorrhages of the skin.

HYPEREMIAS.

These are diffused or circumscribed reddenings of the skin due to the presence of an abnormal quantity of blood in its vessels. They are dependent on circulatory disturbances of vasomotor origin. They appear as spots or patches of varying size, discrete or confluent, and ranging in color from a delicate pink to a dark, purplish red. It is characteristic of them that their redness can be temporarily removed by pressure, showing that the congestion is located in the vessels of the superficial capillary plexus. We distinguish between acute or arterial hyperemia, with quickened circulation and heightened blood-pressure, and passive or venous hyperemia, with lessened pressure and slowed current. The arterial hyperemias include the various forms of simple erythema and roseola, though the latter is rather an external symptom of various internal circulatory disturbances than a distinct cutaneous affection.

ACTIVE ARTERIAL HYPEREMIA.

ERYTHEMA SIMPLEX.

Synonyms.—Rose-rash, *érythème* (Fr.), *Hautröte* (Ger.).

Definition.—Various-sized, diffuse or circumscribed, non-elevated, reddish or purplish patches, disappearing on pressure.

Symptoms and Course.—Erythema simplex appears as non-elevated spots or

macules, varying from pin-point size to large, irregular blotches. The entire body or only certain special regions may be affected. Their color may be faint red-pink, or deeper red, or bluish; and, not being elevated above the level of the skin, the spots cannot be distinguished by the touch. They are sometimes discovered only accidentally, since they are often unaccompanied by any subjective sensations whatsoever; but burning or itching may be present. They last for a few hours, days, or weeks, and they disappear without leaving pigmentation or being followed by desquamation. Special varieties of erythema simplex are the following:

1. Erythema traumaticum, from continued pressure, as of tight bandages, or of the clothing, or from friction of any kind, or from the irritation of the finger-nails. It appears as a diffuse redness limited to the part involved, and usually of short duration; for it disappears quickly when its cause is removed. If this does not occur, however, it may go on and become a dermatitis.

2. Erythema solare, caused by the action on the skin of the ultra-violet rays of the sun and electric light. It occurs among the workmen in electric-light factories, and in tourists, more especially among the mountain-climbers who are exposed to the reflected light from the snow as well as to the direct rays. The exposed parts **only** are affected; and the diffuse erythema that is set up disappears with fairly great rapidity when its cause is removed, but is apt to leave a lasting pigmentation behind. The irritant, if too long continued, may cause the erythema to pass into a true eczematous inflammation.

3. Erythema caloricum is due to the action of a high or a low temperature upon the skin. It is more diffused and may affect parts covered by the clothing.

4. Erythema venenatum. Here the irritant may be directly applied to the skin, or it may reach that organ through the circulation after having been taken into the stomach. The results of the local application of cantharides, mustard, pepper, etc., are examples of the first variety; and the erythematous medicinal rashes following the ingestion of quinine, belladonna, copaiba, and many other drugs, as well as those following the eating of oysters, shrimps, strawberries, etc., are examples of the second. Personal idiosyncrasy plays an all-important part in this latter variety of erythema.

5. Erythema symptomaticum. This occurs from various internal causes, and more especially during the course of the infectious diseases. It is a reflex from the central nervous system. Thus we have the erythema that occurs during suppuration; the erythema vaccenicum, so commonly seen in infants after vaccination; the erythema variolosum that marks the suppurating stage of smallpox; the erythema cholericum that appears in the convalescent stage of cholera; and the erythemas of typhoid fever, of diphtheria, and of malaria. Erythema infantilis occurs in young children in connection with various febrile conditions, more especially with derangements of the gastro-intestinal tract; from its short duration it is called also erythema fugax. In all these forms of the affection the macules are of fairly large

size, and by their coalescence frequently cover extensive areas of the skin with a diffuse redness. In erythema scarlatiniforme, however, one of the commonest forms of the malady, the redness is punctate and closely resembles that of scarlet fever. It occurs after surgical operations, in uremia, septicemia, acute rheumatism, and many other conditions. When the spots are pea-sized and generally distributed over the body they have been termed roseola; but this has been largely abandoned as a specific designation.

Pathology.—The dilatation of the blood-vessels does not persist after death, and erythema simplex has practically no pathology. The occurrence of permanent changes in the vessels and tissues would place the case in question in another class of diseases.

Diagnosis.—The diagnosis of erythema simplex depends on its fugacity, the possibility of causing the macules to disappear temporarily by pressure, and the absence of any signs of inflammation of the skin. The non-appearance of general symptoms, of temperature, gastric and intestinal disturbance, coryza, etc., will prevent our confounding it with the specific exanthemata of the infectious diseases.

Treatment.—This consists essentially in removal of the cause of the affection; local treatment is rarely necessary. In erythema solare prophylaxis is the chief thing; Jessner recommends the application of quinine in solution or of glycerin to the exposed parts in those subject to it. In erythema scarlatiniforme alkaline and bran baths are useful. Cold-cream and dusting powders (Nos. 15, 16, p. 58, No. 18, p. 61) are useful in all cases; alkaline solutions of borax or washing powder may be employed with benefit before they are applied.

PASSIVE VENOUS HYPEREMIAS.

LIVEDO.

Definition.—A circumscribed or diffused dark, bluish-red discoloration of the skin, disappearing on pressure.

Symptoms and Course.—The affected skin is cold, and is either uniformly discolored or mottled with bluish or purple spots removable by pressure. If too long continued, permanent dilatation of the veins, œdema, blood-extravasations, and even local gangrene (decubitus) may occur. The subjective symptoms are coldness of the part, with formication, prickling, and other disturbances of sensibility. The extent of the livedo depends on the size and the situation of the vessel affected; the smaller and the nearer the periphery it is, the less its size. A central venous obstruction or one affecting one of the larger vessels gives rise to the general lividity known as cyanosis, a condition whose discussion belongs to the domain of general medicine.

Pernio or chilblain is a variety of livedo. It appears as dusky-red, livid patches

of skin on the fingers, nose, toes, heel, or external border of the foot, and is seen most often in children and in old persons with poor circulations. Subjectively there is tenderness, itching, and burning; and the local process may go on to vesiculation, ulceration, and even superficial sloughing.

Etiology.—The obstacle to the venous reflux which causes the passive congestion is usually mechanical in its nature. Paralysis of the vessel or disease of its walls, thrombosis, embolism, or pressure, as by the bed or a tumor, etc., are the usual causes.

Treatment.—This consists, above all, in the removal of the cause of the hyperemia, if it can be found. Bandages may be employed to support the dilated veins, and elevation of the part affected will favor the return flow of blood through the veins. Massage and friction of the part are useful. Ergot is of some benefit to stimulate the muscular structure of the vessels.

In the treatment of chilblains we must attempt to stimulate the stagnant circulation by frictions with camphorated oil or linimentum ammoniæ, combined with brisk exercise and a suitable and warm clothing of the part affected. Iodine ointment, or the tincture of iodine, preferably discolored by the addition to it of half its amount of aqua ammonia, is a useful application, as is also the ointment recommended by Sack (No. 28, p. 74). If the surface is broken and ulceration has occurred, boracic-acid ointment (No. 29, p. 74) can be employed.

No. 28. Sack's Camphor Ointment.

| | | | | |
|----|----------------|---|---|----------|
| Rx | Balsam. Peruv. | . | . | 1 part |
| | Camphor. trit. | . | . | 2 parts |
| | Ol. amygdal. | . | . | 16 " |
| | Adip. lanæ | | | |
| | Aq. rosæ | . | . | aa. 20 " |

No. 29. Boracic-acid Ointment.

| | | | | |
|----|---------------|---|---|---------|
| Rx | Ac. boric. | . | . | 1 part |
| | Adip. lanæ | . | . | 3 parts |
| | Adip. suillis | . | . | 4 " |

ANEMIAS.

General anemia of the skin, due to the blood-changes of excessive hemorrhage, anemia, chlorosis, leucemia, etc., is a symptomatic affection whose consideration belongs to general medicine. Circumscribed anemia, characterized by blanching of the skin, decrease of temperature, and cold sweat, may occur from spasm of the cutaneous vessels, or from their occlusion by an embolism or through stretching. None of these conditions causes dermal changes of sufficient importance to notice here.

CEDEMAS.

Diffuse and generalized œdema of the skin or anasarca occurs as a symptom in various internal diseases. Of the circumscribed œdemas, urticaria and prurigo demand our attention.



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URTICARIA
PLATE II

URTICARIA.

Synonyms.—Hives, nettle-rash, *Nesselausschlag* (Ger.), *urticaire* (Fr.).

Definition.—An eruption characterized by the appearance of ephemeral white or reddish wheals, accompanied by intense pruritus and burning.

Symptoms and Course.—The outbreak of an attack of urticaria is frequently ushered in by symptoms of gastric disturbance, anorexia, nausea, malaise, headache, and a moderate fever. Then, preceded perhaps by burning and tingling of the skin, there suddenly appear wheals, firm, circumscribed, convex elevations of the skin, usually oval or rounded in shape and of a reddish or whitish color. They resemble very closely the lesions caused by the sting of the common nettle, the *Urtica urens*, from which both the scientific and the common name of the disease are derived. They are always ephemeral, lasting from one to a number of hours; and they disappear without desquamation, leaving no trace upon the skin. They may be few in number, or so numerous as to cover a great part of the body, but they are never symmetrical. Any part of the integument may be affected, and the mucosæ are not exempt; the mouth, pharynx, air-passages, and gastro-intestinal tract may be involved, as is shown by the dyspnoea and vomiting that not infrequently precede the outbreaks of cutaneous urticaria caused by the ingestion of irritant materials. It occurs at all periods of life, but children are especially prone to it. And while the individual lesions are extremely fugacious, coming out suddenly and disappearing with almost equal rapidity, successive recurrent attacks may make the disease a chronic one if the irritation that causes it continues to act. The wheals sometimes occasion burning and tingling; but itching is the prominent subjective symptom, and it is usually so severe that the patient's body is marked with excoriations and scratch-marks long after the individual wheals or the whole eruption has disappeared.

A number of subvarieties of urticaria may be mentioned. Thus we have urticaria annularis when the wheals occur in rings; urticaria gyrata and urticaria figurata when they appear as irregular circular or crescentic forms due to the coalescence of adjacent lesions. Occasionally the wheals are red, giving us urticaria rubra; more frequently the white form, urticaria alba, is present. When the wheals are very large, perhaps equalling a hen's egg in size, we have urticaria



FIG. 33.—Urticaria gyrata.
From a photograph in the author's collection.

tuberosa or gigantea. Urticaria chronica differs from urticaria acuta, as before said, only in the appearance of successive lesions for a long period of time. More important are the following varieties:

1. Urticaria papulosa, the equivalent of the lichen urticatus of the older writers. This occurs in ill-nourished children with faulty digestions, and is a combination of the features of the wheal and the papule. The wheals are pea- to bean-sized, and are accompanied by intense itching. The child uses its finger-nails freely, and the torn papules tipped with blood-crusts, with the excoriations and pustules due to secondary infection, may remain long after the original lesion has vanished.

2. Urticaria vesiculosa and urticaria bullosa are rarer, especially the latter. Here the œdema is sufficient to cause an accumulation of fluid under the epidermis,

so that the wheal is tipped with a vesicle or a bleb. The affections may even be mistaken for herpes or pemphigus if seen after the œdema has subsided.

3. Urticaria factitia is a form of the malady that may be excited at will in cases where there is excessive irritability of the cutaneous nerves. The application of any irritant to the skin causes the appearance of a wheal corresponding in shape and extent to the dermal area involved. The scratch of a finger-nail results in a white stripe, that turns first red, then white again, and finally develops into a regular urticarial wheal.

4. Urticaria hemorrhagica, called also purpura urticans, where there is an effusion of blood as well as serum



FIG. 34. — Urticaria factitia.
From a photograph in the author's collection.

from the vessels, appears as a wheal with a hemorrhage in its center. An ecchymosis is left behind when the urticaria disappears.

5. Urticaria pigmentosa is a rare form of the disease, cases of which have been described by Morrow and others. It is an extremely chronic form, the wheals be-

ginning in early or even in intra-uterine life; they are very persistent, and brownish red in color; and they leave pigmented spots behind.

Etiology.—Urticaria is due to disturbances of the vasomotor nerves, occurring either directly or by reflex action, giving us the idiopathic and the symptomatic forms of the disease. Such disturbances occur from a great variety of causes. Idiopathic urticaria is caused by the bites and stings of insects, mosquitos, bedbugs, lice, bees, wasps, etc. Leech bites, nettle stings, and contact with jellyfishes will also cause it. Direct mechanical violence will occasion its appearance, as will also certain medicinal substances. Symptomatic urticaria is the form most frequently met with, and is commonly dependent on digestive disturbance. Among the things that cause it are lobsters, clams, and various kinds of fish; strawberries, gooseberries, and other fruits; cucumbers, mushrooms, oatmeal, peas, beans, garlic, salad, etc.; beer and alcoholic beverages. Sausage seems to be an especially frequent cause; and Singer found that in many of these cases there was a marked increase in number of the normal bacteria of putrefaction of the lower intestine. Various medicines used internally, as the balsams, arsenic, salicylic acid and the salicylates, quinine, chloral, opium, turpentine, and the iodide of potassium, will cause it. Moral emotions, shame, fear, and anger, sometimes provoke an attack. Urticaria also occurs frequently in the course of rheumatism, purpura, prurigo, and pemphigus, and in the prodromal stages of the acute exanthemata.

Sometimes no efficient cause for the urticaria can be found, more especially in the chronic cases. Personal idiosyncrasy performs an all-important part in its causation, and substances that give no trouble at all to most people invariably cause an attack of urticaria in those susceptible to their noxious influences.

Pathology.—The pathology of urticaria, as found by Neumann, Vidal, and others, consists simply in a circumscribed œdema marked by serous effusion into the papillary body and the rete. Under the influence of the vasomotor nerves there



FIG. 35.—Urticaria pigmentosa.*
Professor Elsenberg's case, Warsaw, Russia.

occurs capillary spasm, followed by paralytic dilatation and transudation of serum. The white color of the center of the wheal is caused by the greater pressure of the effusion at that point.

Diagnosis.—Urticarial wheals when present are usually too characteristic to be mistaken for anything else. The points to be noted are the rapid appearance, the short duration, the itching and stinging, the rapid subsidence without desquamation, and the possibility of producing an urticaria factitia by irritating the skin. It can be distinguished from scabies by the absence of burrows and the non-involvement of the finger-clefts and other characteristic localities; but it must not be forgotten that it sometimes occurs in conjunction with that disease. In erythema simplex the patches are larger, more diffuse, and have no whitish centers. When the urticarial wheals coalesce, especially upon the face, the condition may resemble an erysipelas; but the itching, evanescence, absence of a definite point of origin and of constitutional symptoms will serve to prevent mistake.

No. 30. Saline draught.

℞ Magnes. carb. . . . 1 part
 Magnes. sulph. . . . 2 parts
 Aq. menth. pip. . . . 16 "

No. 32. Menthol Capsules.

℞ Menthol gr. 1
 Ol. amygdal. . . . gtt. 4
 In caps. gelat.

No. 34. Carbolic Spirit.

℞ Ac. carbolic 3 parts
 Alcohol 100 "

No. 31. Atropia Pills.

℞ Atropia sulph. . . . gr. $\frac{1}{6}$
 Glycerin
 Aquæ aa. 3i
 Gum. tragacanth. . . . q. s.
 M., et ft. pil. No. 20.

No. 33. Saalfeld's Menthol Lotion.

℞ Menthol 5 parts
 Alcohol 100 "

No. 35. Chloral Lotion.

℞ Chloral 3 parts
 Aq. laur. cer. . . . 50 "
 Aq. dest. . . . 200 "

No. 36. Chloral-Camphor Ointment.

℞ Chloral
 Camphor. . . . aa. 1 part
 Misce, et adde
 Glycerin. . . . 2 parts
 Ungt. simpl. . . . 16 "

Prognosis.—The acute form of the disease always gets well in a few days; but the prognosis of the chronic form depends on the possibility of ascertaining and removing its cause. The papular urticaria of children is frequently a very obstinate malady, getting better in the winter, but recurring during the warm weather.

Treatment.—The treatment of urticaria in its more refractory varieties is entirely

empirical. For the acuter and fugacious forms it suffices to find out and remove the cause. If, as is usually the case, it is located in the gastro-intestinal canal and has not yet left the stomach, a mild emetic, ipecac or mustard, is sufficient. This should be followed by a saline cathartic (No. 30, p. 78) or one of the mineral waters. The bowels being thus regulated, they should be kept in order with small quantities of rhubarb and soda; and salol in doses of 5 grains may be administered several times daily with advantage.

The treatment of the more chronic forms of urticaria is often a difficult and perplexing task. The underlying cause is frequently undiscoverable or irremovable. If rheumatism or gout is present the alkalis and colchicum are in order. Any concomitant disease of the internal organs, and more especially of the uterus, must be treated. Of the internal remedies, atropia, pilocarpine, menthol, and arsenic are the most useful. Atropia is recommended by Schwimmer in doses of $\frac{1}{120}$ of a grain (No. 31, p. 78). Arsenic may be given in the form of the Asiatic pill (No. 6, p. 46), or as Fowler's solution, 4 to 10 drops in water three times daily. Joseph reports good results from the use of menthol (No. 32, p. 78). Pilocarpine is recommended by Pick. The bromide of potash in large doses has accomplished good results in my hands; and so have the salicylate of sodium, 1 to 2 drams daily, antipyrin, 15 to 45 grains daily, and the iodide of potassium, 15 to 90 grains daily, in those of others.

Local treatment is of great importance, for the patients demand relief from the intolerable itching. This can be accomplished by dusting the surface freely with flour, or by the application of compresses wrung out in cold water. Any of the antipruritic lotions and powders recommended for pruritus may be useful (Nos. 11, 12, p. 56, No. 17, p. 61, No. 27, p. 70). Alkaline, bran, or starch baths are serviceable. Sponging the surface with vinegar and water or with a strong solution of baking-soda is valuable. Saalfeld recommends menthol in alcoholic solution (No. 33, p. 78) sprayed or dabbed on the affected parts. Carbolyzed alcohol (No. 34, p. 78) may be employed. Finally, chloral in the form of a lotion (No. 35, p. 78), or together with camphor as an ointment (No. 36 p. 78), is one of our most efficient antipruritics.

Intractable cases are sometimes benefited by change of air, a sea voyage, or a course of mineral waters at Saratoga, Vichy, etc.

PRURIGO.

Synonyms.—*Juckflechte* (Ger.), *strophulus pruriginex* (Fr.).

Definition.—A chronic affection characterized by the appearance of small, pin-head-sized, whitish or pinkish resistant papules, with general thickening and pigmentation of the skin and intense pruritus.

Symptoms and Course.—This malady, first differentiated and described by the elder Hebra, while fairly common in Austria and certain other parts of Europe, is

extremely rare in England and in this country. A few American cases have, however, been reported by Wigglesworth, Campbell, and others, and it is probable that



FIG. 36.—Prurigo.
After Van Haren-Noman.

the milder forms of the disease occur here with greater frequency than is generally recognized.

The malady always begins during the first or second year of life, making its appearance as an urticaria most commonly of the papular variety, lichen urticatus. Sooner or later there appear small, millet-sized, deep-seated, firm papules covered with normal skin. They occur first on the extensor surfaces of the limbs; the trunk may be invaded later; but the palms, soles, and face are always exempt. The inner surfaces of the joints are also unaffected. The papules may be quite colorless, so that they are hardly visible, or they may have a faint rosy tint; but they can always be readily felt, and the skin in a well-developed case feels like the surface of a nutmeg-grater. After they have existed for some time the skin becomes

markedly thickened, its furrows are exaggerated, and a brown discoloration due to blood-pigment replaces the normal hue of the integument. The neighboring lymphatic glands enlarge, forming the so-called "prurigo buboes."

Itching is the predominant subjective symptom, and has given a name to the disease. The impetus scabendi is so intense that resistance to it is out of the question. The patient must scratch, no matter where he is; and he tears off the tops of the papules and lacerates his skin in the attempt to relieve himself. Hence arise excoriations, blood effusions and crusts, and inflamed areas, secondary appearances that may almost mask the original disease. At night the itching is especially severe, and causes obstinate insomnia; but the attacks come on at other times, and

render the patient unfit for society, for marriage, and for most of the ordinary avocations; they have even driven him to suicide.

Once firmly established, the malady usually lasts for life, becoming worse during each winter season. But the cases vary much in severity, and we distinguish between *prurigo ferox* or *agria*, to which the above description more especially applies, and the milder form of the disease, known as *prurigo mitis*.

Etiology.—The cause of the disease is unknown. It was formerly supposed to be especially common among the poorest classes, where improper nutrition and faulty hygiene are the rule; but later investigators (Joseph and others) have found it just as frequently among the healthy and the well nourished.

Pathology.—The papules are due to exudation and cell-infiltration in the rete and the papillary body. The thickening of the skin that is so marked in old cases is due to increase of the corneous layer, and the pigment in the rete is greatly in excess of the normal amount. The erector muscles of the hairs are hypertrophied and the sweat-glands are enlarged, while the sebaceous glands are atrophied.

Diagnosis.—The deep-seated, hard papules, irregularly distributed over the body and most numerous on the extensor surfaces of the limbs, and the beginning of the malady in early life, are characteristic points and will facilitate the diagnosis. Eczema has no characteristic nodules, is vesicular, pustular, moist, or crustaceous, and affects by preference the flexor surfaces. Pruritus is very common and also has no nodules or thickening of the skin, and no local lesion save from the scratch effects; it begins at any age and is quite indeterminate in its locality. Scabies has its favorite location on the hands and genitals, and has the characteristic burrows. In phtheiriasis the presence of the parasite and the absence of the papules will serve to prevent mistake.

Prognosis.—*Prurigo mitis* is curable, and *prurigo ferox* can be relieved. The opinion of Hebra as to the absolute intractability of the disease is no longer held.

Treatment.—Attention to the general health is of the greatest importance, and fresh air, exercise, change of scene, and regulation of the digestive and other functions must be the basis of our treatment. Children should sleep in tightly closed flannel night-garments, and their hands should be bound up if necessary. Iron, quinine, and more especially cod-liver oil are indicated. Of internal remedies ergotine in 3- to 15-grain and bromide of potassium in 15- to 90-grain doses are perhaps the most useful. Pilocarpine, either hypodermically or by the mouth, has done good in some cases.

Externally, hot water and soft soap in abundance are necessary with any treatment. The naphthol method introduced by Kaposi is perhaps the best. A 3- to 10-per-cent. naphthol ointment (No. 37, p. 82) must be vigorously rubbed into the affected skin daily for from four to eight days; meantime the surface must not be washed, and the patient can take a bath only when the peeling that results has set in. Prolonged sulphur baths (for one half to one hour) taken several times weekly, and followed each time by the naphthol ointment (No. 37, p. 82) or a chloral-camphor salve

(No. 36, p. 78), are efficacious. Tar baths or painting the parts with tar spirit (No. 10, p. 56) is recommended. Sulphur and tar, preferably in the form of Wilkinson's ointment (No. 38, p. 82), is a favorite remedy, as are frictions with cod-liver oil used persistently for long periods of time.

No. 31. Kaposi's Naphthol Ointment.

℞ Naphthol 5 parts
Sapo. virid. . . . 30 "
Petrolati 60 "

No. 38. Wilkinson's Ointment.

℞ Sulphur. sublim. . . .
Ol. cadin. . . . āā. 4 parts
Cret. præp. . . . 5 "
Sapo. virid. . . .
Adipis āā. 16 "

The intervening eczemas, dermatites, ecthymas, etc., must be treated appropriately. Since in any case the treatment must be long continued, it is well to change from one to another of the above from time to time. And, in view of the extreme chronicity of the malady and the great tendency to relapses, a careful toilet of the skin and attention to its hygiene must be persisted in for life.

HEMORRHAGES.

Under this heading we class the various affections in which blood is present in the skin outside its normal position in the vessels. This may occur through rupture of the cutaneous vessels (rhexis), the skin itself remaining intact or not, or through diapedesis, the serum and corpuscles exuding through the apparently unbroken vessel wall. In either case the effused blood forms a sharply limited discoloration, which is not removable by pressure, and which undergoes the characteristic hematin color-changes, red, purple, yellowish-green, and brown, before it is finally absorbed. It is situated either between the layers of the epidermis or more deeply in the corium and the papillæ. When the spots are rounded, oval, or irregular, non-elevated, and from pinhead to finger-nail in size, they are known as petechiæ; longer and narrower effusions are vibices; larger, rounded, non-elevated patches are ecchymoses; while ecchymomata are extensive, deep-seated, flat or raised tumors.

Cutaneous hemorrhages occur from the most moderate traumatism in those affected with hemophilia (bleeders). This is an affection whose etiology and pathology is unknown, but which seems to be hereditary, and which occurs in people apparently otherwise perfectly healthy. Hemorrhages occur in any one as the result of traumatism, and usually go on to absorption. In exceptional cases only do they cause a reactive inflammation with casting off of the necrosed parts. In both varieties rest, the application of cold compresses, and later massage is the appropriate treatment. A symptomatic and secondary dermal hemorrhage occurs in certain cutaneous diseases (pemphigus, ecthyma, parenchymatous dermatitis) and in some general diseases (pyemia, diphtheria, smallpox, etc.).

In two affections, however, purpura and scurvy, cutaneous hemorrhage is the prominent and sometimes the only symptom.



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PURPURA
PLATE V

PURPURA.

Synonyms.—*Blutfleckenkrankheit* (Ger.), *purpura* (Fr.).

Definition.—Purpura consists in the appearance of various-sized, flat or raised, red or purplish hemorrhagic patches, not disappearing on pressure.

Symptoms and Course.—All the varieties of purpura are characterized by the sudden appearance of hemorrhagic spots in the skin of varying size and shape. Fever, general malaise, pains in the limbs and joints, gastro-intestinal disturbances, and gingivitis may or may not accompany the outbreak. In accordance with the presence and severity, or absence, of these concomitant symptoms, we distinguish four forms of the malady :

1. Purpura simplex. Here the constitutional symptoms are very slight or absent, and the hemorrhages small in size and comparatively few in number. They come on quite suddenly, often at night ; and, as they cause no inconvenience, they are frequently discovered only by accident. They appear as bright-red, pinhead- to pea-sized spots, occurring first and most abundantly on the lower extremities ; the trunk and upper extremities are more slightly affected, and the face remains free. They sometimes show a distinct tendency to become urticarial (purpura urticans). Purpura simplex has been seen after the use of quinine, salicylic acid, iodide of potassium, and other drugs, but its cause is frequently undiscoverable, and it occurs most commonly in healthy individuals. The malady is self-limited ; the spots undergo the usual retrogressive color-changes, and the affection ends in two to three weeks. Successive crops of eruption may, however, prolong it for some time.

2. Purpura hemorrhagica, known also as morbus maculosus Werlhofii and land-scurvy. This is a much more serious malady, with marked general symptoms and more extensive hemorrhages. The fever is high and is accompanied by headache, anorexia, nausea, constipation, and pains in the limbs. The petechiæ appear suddenly, and are larger than those in the simple variety, being frequently an inch in diameter. Petechiæ appear also in the nasal, buccal, bronchial, gastro-intestinal, and genito-urinary mucous membranes, and, the epidermis being thin and readily removed, hemorrhages are very liable to occur. In most cases the patients get well, though the disease may be prolonged for many weeks by the outbreak of successive crops of the eruption ; but the loss of blood both into the skin and through the mucous orifices may be so severe as to cause collapse and death.

3. Purpura rheumatica or peliosis rheumatica. Here the hemorrhages into the skin itself are usually small, the mucosa are affected, and the joints are always involved, several of them being usually red, painful, and swollen. There is marked fever and lassitude, with gastro-intestinal derangement, constipation, colic, and vomiting. Hematuria and albuminuria are frequent. The affection appears epidemically in the spring and autumn, and is often seen in conjunction with erythema multiforme and erythema nodosum, which has led some authorities to classify it with the polymorphous erythema, and others (Joseph) to regard it as an infectious disease.

4. *Purpura scorbutica* or scurvy. This formerly common malady is now rarely seen, thanks to improved methods of hygiene and feeding. Growing anemia and a gradually increasing depression of the general health precede the appearance of the cutaneous hemorrhages, which may take the form of petechiæ, vibices, sanguineous bullæ, ecchymoses, and ecchymomata; while intramuscular and subseral blood-effu-



FIG. 37.—*Purpura simplex*.
From photograph in the author's collection.

sions also occur. Slight injuries to the affected skin lead to gangrene and the formation of scorbutic ulcers, with spongy bleeding bases, and showing little tendency to heal. The danger of internal hemorrhages is not so great as in the other forms, but hematemesis does occur, as also albuminuria, hemorrhagic pleurisy, and pericarditis, pneumonia, and inflammations of the joints. The gingivitis that accompanies the affection is characteristic. The gums are swollen, soft, spongy, and covered with a dirty grayish coating. They bleed easily, and there is marked fetor ex ore.

Etiology.—The cause of purpura is in many cases undiscoverable. It occurs, however, secondarily to certain blood-alterations, as in the specific fevers, typhus, typhoid, variola, etc.; in snake-poisoning; after the use of certain drugs, as iodine, quinine, copaiba, belladonna, mercury, and others;

in scurvy, leucocythemia, pernicious anemia, chronic kidney and cardiac disease. Personal idiosyncrasy undoubtedly plays a large part in its production. In purpura simplex there is most often no cause discoverable; the patients are often in the best of health. Purpura hemorrhagica is apparently dependent on bad hygiene and improper diet. Purpura rheumatica is related to erythema multiforme, and its cause is similarly obscure. Purpura scorbutica is probably microbic in origin, though faulty

nutrition and the want of fresh food, especially of vegetables, and the absence of fresh air furnish the necessary conditions for its development. It was formerly common on shipboard and in penal and other institutions where large bodies of men were kept under unhygienic conditions.

Pathology.—The pathological process consists in a simple hemorrhage unattended by inflammation; the blood is effused in the papillary bodies or in the subcutis, and the vessels from which it comes may or may not be ruptured. It forms a foreign body that is slowly removed by absorption. Lardaceous and inflammatory changes of the vessel walls have been noted in some cases, while in others thrombosis or embolism has been found.

Diagnosis.—This is rarely attended with any difficulty. The sharply circumscribed spots, unaffected by pressure, can hardly be mistaken. In purpura simplex there are no other symptoms. In purpura hemorrhagica the mucosæ are affected and internal hemorrhages occur. The joint complications are characteristic of purpura rheumatica. Purpura scorbutica is readily recognized by the gingivitis combined with the cutaneous hemorrhages. Inflammatory spots differ from purpuric ones in their elevation, disappearance under pressure, and subsequent desquamation.

Prognosis.—This varies with the variety of the disease. In general the less frequent and extensive the hemorrhages, and the less the general constitutional involvement, the better the prognosis. Purpura simplex always ends in recovery, though its course may be slow. Purpura rheumatica is a stubborn malady, and relapses frequently occur. Purpura hemorrhagica is a dangerous and treacherous disease, and it is impossible to foretell its termination. In scurvy the prognosis is also doubtful.

Treatment.—This should be directed to the cause when that is ascertainable. Absolute rest in bed is essential in all but the mild cases. The patient should be kept very quiet, and care be taken that he obtains sufficient sleep. The diet should be mild and composed chiefly of milk. Alcohol in moderation may be given, especially if the pulse is weak. Of the internal remedies ergotine in 15- to 30-grain daily doses is valuable, as is also turpentine, 1 dram every three hours. Nitrate of silver in doses of $\frac{1}{4}$ to $\frac{1}{2}$ grain, or the tincture of the chloride of iron in full doses, may be tried. In the rheumatic form cold and anodyne applications should be made to the joints. Hemorrhages must be treated on general principles. Tamponade may be necessary if they occur from the nose; ice pills or ice-water enemata when coming from the stomach or intestines. If collapse occurs, alcohol, camphor, and musk should be employed, and subcutaneous and intravenous infusions of 0.5-per-cent. saline solution may be required. In the scorbutic form prophylaxis by means of a proper supply of fresh vegetable food and a careful attention to hygienic details is the most important part of the treatment. Acids, and especially those of the vegetable variety, must be freely employed (lemons and similar fruits). The constitutional treatment is that suitable to anemia, and the various agents mentioned above may be employed for the purpose.

CLASS III.

INFLAMMATIONS.

1 SUPERFICIAL INFLAMMATIONS AFFECTING THE CUTIS AND SUBCUTIS.

THIS class includes some of the exanthemata, the dermatomycoses, the dermatites, catarrh of the skin (eczema), and the various forms of herpes, pemphigus, psoriasis, etc. All these maladies are characterized by a superficial inflammation of a transitory character, with circumscribed exudation and trifling tissue-changes. Many of them are caused by organisms, and it seems likely that a similar etiology will be finally established for others. By common consent some of them belong rather to the domain of general medicine than to dermatology; and of these the cutaneous lesions alone will receive consideration.

MORBILLI.

Measles, *Masern* (Ger.), *rougeole* (Fr.), is a specific contagious fever, characterized by catarrh of the respiratory mucous membrane and a general papular eruption. After a stage of incubation lasting from nine to eleven days there occurs a catarrh of the mucous membranes of the bronchi, larynx, nose, and eyes, accompanied by a general febrile movement and lasting four days. Then the eruption appears, showing first upon the cheeks or forehead, spreading thence on to the neck, chest, breast, and back, and finally invading the extremities. In two or three days the body is covered, and by the time that the extremities are involved the exanthem has begun to fade on the parts first attacked. It appears as small, flat or slightly raised papules, which tend to coalesce and form characteristic circular or crescentic figures. The lesions, however, always remain more or less discrete, and they never form large diffusely reddened areas. Their color is a pink or red of varying intensity, dependent on the amount of the hyperemia; and this may be intense enough to occasion capillary hemorrhages on the surface of the papules, without, however, indicating



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SCARLATINA

PLATE VI

an especially serious form of the disease. The rash disappears by the fourth or sixth day, and with it the fever; and it is followed by a small, fine desquamation, which may be so slight as almost to escape notice. We are ignorant of the cause of the disease.

The contagium is present in the blood, the secretions of the mucosæ, and the epidermic scales cast off during the process of desquamation. The dermic process consists of an acute hyperemia, with exudation into the vascular papillæ of the corium, and congestion of the perifollicular plexuses of vessels. The skin eruption disappears after death.

From rubeola, morbilli may be distinguished by its persistence for several days and the crescentic grouping of the papules. The diagnosis from scarlatina is important, and is made mainly by the absence of the characteristic sore throat and the discreteness of the macular or papular eruption. From variola it may be distinguished by the catarrhal symptoms, the persistence of the fever after the eruption is developed, the absence of vesicles and umbilicated pustules, and the discovery of the source of the contagion. The eruption of measles requires no treatment.

RUBEOLA.

German, French, or hybrid measles, *Rötheln* (Ger.), *rubéole* (Fr.), is a contagious disease, marked by a slight febrile movement and a general macular exanthem. After an incubation of about two weeks there occurs a mild catarrhal conjunctivitis and rhinitis lasting two or three days. The eruption then begins on the face and scalp, and extends rapidly downward on to the trunk and extremities. It consists of pale rosy or reddish macules, varying in size from a pinhead to a large pea. By the fourth day it has disappeared, and it is not followed by any desquamation. Fever may be absent. It requires to be distinguished from measles, scarlatina, and the syphilitic roseola. The macules differ from those of measles in that they are paler, more discrete, and not crescentic; the duration of the disease is shorter, and its course is milder. In scarlatina the temperature is higher; the onset is marked with vomiting; the pharyngitis is characteristic; the rash appears first on the neck and breast, and is more of the nature of a diffuse erythema. The roseola of syphilis is accompanied by other evidences of the presence of lues, the sclerosis, polyadenitis, etc. Rubeola requires no special treatment.

SCARLATINA.

Scarlet fever, *Scharlach* (Ger.), *scarlatine* (Fr.), is a specific contagious fever, characterized by a macular and diffuse cutaneous exanthem, with involvement of the throat and the internal organs.

After an incubation of from one to eight days, fever suddenly sets in, accompanied by sore throat and often by vomiting. The red and swollen filiform papillæ

projecting through the thickly coated surface of the tongue give to that organ a characteristic strawberry-like appearance. In from twelve to twenty-four hours after these initial symptoms the exanthem makes its appearance, beginning on the neck, and rapidly spreading over the chest, trunk, back, limbs, and the dorsal surfaces of the hands and feet, the face remaining comparatively free. It consists of small pin-point- to pinhead-sized bright-red papules, disappearing on pressure, and in places so closely grouped together as to form a diffuse redness. This is most marked upon the trunk, and here the general color of the skin may be compared to that of a boiled lobster. The rash remains at its height for from three to four days; it then begins to fade slowly, and in from four to ten days has entirely disappeared. Then follows a desquamation that is characteristic, being more complete and extensive than that of any other of the eruptive fevers. It may be furfuraceous or lamellar; in the latter case the skin peels in large flakes, and complete casts of the palms and soles, or of the fingers with the nails, may be formed.

Sometimes the eruption is slightly papular or even vesicular. In severe cases there may occur an extravasation of blood into the superficial layers of the skin, giving us the hemorrhagic form of the exanthem.

The contagion of scarlatina is a fixed one, and is most active during the stage of eruption. It is present in the exhalations of the patient, as well as in the desquamated scales, and may be carried from one person to another by an immune individual, or in the clothing, etc. It is probably a microorganism, or a product of microörganic growth; but we are still entirely in the dark as to the actual pathogenic agent. The hyperemia and exudation are limited to the rete and the papillary layer of the corium, but the process is more intense than in the case of measles. The eruption disappears after death.

Scarlatina requires to be differentiated from measles, rubeola, erysipelas, and the erythemata. The throat involvement, sudden onset, high fever, and the punctate rash beginning on the chest are characteristic of scarlet fever. In measles the eruption consists of larger macules arranged in crescentic form; the face and especially the lips are first affected; the symptoms of conjunctivitis and other catarrhs are marked; the disease does not begin with vomiting, and the desquamation is small and very fine. In erysipelas the smooth, glazed surface of the affected skin and the limited area involved should prevent mistake. The erythemata from digestive and other disturbances are as a rule unaccompanied by fever and are not followed by desquamation. Certain medicinal rashes, such as those occasioned by belladonna and quinine, may resemble scarlatina closely; but they may be distinguished from it by their fugacity and by the absence of the fever and the throat symptoms. So far as the rash is concerned, any deviation from its normal course, too slow development, too rapid disappearance, or an undue prolongation, are of bad prognosis; so also is a petechial or hemorrhagic eruption.

The skin during the course of the disease should be regularly inuncted with

almond-oil, vaseline, or cold-cream; this is especially useful in the desquamative stage, since it not only protects the surface, but also tends to prevent the dissemination, through the atmosphere, of the scales, that are one of the main carriers of the contagion.

VARIOLA.

Smallpox, *Blattern* (Ger.), *petite vérole* (Fr.), is a specific contagious febrile disease, characterized by the appearance of a papular, vesicular, and pustular eruption on the skin. After an incubation of from twelve to fourteen days the disease begins with a severe chill, followed by high fever, with frontal headache and pain in the back. These symptoms last for from two to three days; and then, with a diminution or complete cessation of the fever, the eruption appears. It consists of minute red spots, coming first on the face around the lips and chin and on the neck and wrists. In two to three days they spread over the entire body. At first macular, the lesions soon develop into small, round, hard papules; a day later they become vesicular, and by the fifth day the vesicles are fully developed, umbilicated, and surrounded by a reddened, indurated, and tender base. They then become pustular, and the advent of suppuration is marked by a fresh rise of temperature, the secondary fever. By the tenth or twelfth day the pustules begin to retrogress by rupture or desiccation, and a peculiar and characteristic odor emanates from the patient. In a variable number of days the crusts and scabs fall off, leaving reddened areas that disappear, or permanent cicatrices, in accordance with the involvement of the corium in the destructive process. The number of pustules may be few, even less than a dozen, or there may be thousands of them; they may be discrete or confluent, and their contents, though usually pus alone, may, in the hemorrhagic form of the disease, be more or less mixed with blood. The mucosæ are generally affected; but here, on account of the thinness of the epidermic layer and the maceration to which it is subjected, erosions and superficial ulcerations take the place of the papules, vesicles, and pustules.

Variola is eminently contagious, being transmitted in the volatile emanations of the patients. It is probably due to an organic cause, though its nature is as yet unknown. The secondary fever is septicemic, and is due to presence of the pus-cocci and their products.

The prodromata and initial symptoms above enumerated, the papules developing into umbilicated vesicles and pustules, the cessation of the fever with the appearance of the eruption, and its subsequent recrudescence when suppuration begins, are characteristic. Nevertheless the diagnosis from measles, scarlatina, varicella, and the general pustular syphiloderm is often difficult. In measles we have the initial stage of catarrh of the respiratory and conjunctival mucosæ, and the larger, flatter, discrete papules, never becoming pustules. In scarlatina there is the sudden onset, with vomiting and throat symptoms; there is no remission of the fever as the eruption spreads, and the rash appears first on the chest and neck. In varicella the general

symptoms are very slight; the vesicles are usually few, discrete, and filled with a clear serum; they are rarely umbilicated, and there is no suppuration and but little scarring. The pustular syphilide is often accompanied by fever, and may greatly resemble smallpox. It can be distinguished from it by the absence of umbilication, its irregular spread, its frequent arrangement in crescentic or circular figures, the presence of other symptoms, and the history of the disease.

VACCINIA.

Cowpox, *Kuhpocken* (Ger.), *vaccine* (Fr.), is an eruptive disease of the cow, with a local lesion resembling that of variola at the site of inoculation, and occasionally



FIG. 38.—Vaccinia.
From photograph by the author.

with other general eruptions of varying form. When the inoculation material is taken from the human subject the course of the affection is more rapid and milder than when taken directly from the cow. In from three to ten days there appear small, red, indurated papules on the inoculated area, which in two or three days more become vesicular and umbilicated. Two to three days later they become purulent, and their base becomes hard and inflamed. With this there are moderate fever and mild symptoms of constitutional disturbance. Retrogressive changes and desiccation then commence; the inflammation disappears, and a hard, dark-colored scab remains on the site of the lesion and falls off by the third or fourth week. A reddened punctate cicatrice, which later turns white, is left behind. The amount of inflammation and destruction of tissue vary much in different cases. Not infrequently a so-called "raspberry growth" follows the vaccination, which is simply the exuberant dry granulation tissue resulting from the ulcerative process.

A generalized eruption occasionally occurs at the same time and from the same cause. This is sometimes a roseola, running a rapid course, and disappearing in two days with a

slight desquamation; or it may be a scarlatiniform reddening of the skin, or consist of a dusky mottling with patches like those of rubeola. Very rarely the eruption is



VARIOLA.



TYPGRAPHURE.

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MORBILLI.

PLATE XL

vesicular, and it then resembles a beginning variola closely. Urticaria and erythema multiforme have been seen in connection with vaccinia.

VARICELLA.

Chicken-pox, *Windpocken* (Ger.), *petite vérole volante* (Fr.), is a contagious febrile disease, characterized by the formation of vesicles filled with a clear serum. It occurs most often in infancy and childhood, and the general symptoms that accompany it are so slight that the patients are not usually confined to bed, and are often ignorant of the existence of the disease until the eruption appears. After fifteen to eighteen days of incubation a mild fever occurs, and hyperemic macules appear scattered over the body, which rapidly become papules, but never have the hardness that is characteristic of variola. They soon develop into clear vesicles situated on slightly hyperemic bases, but they rarely become umbilicated. They come in successive crops, and usually do not exceed pea-size. Twenty-four hours after their appearance desiccation begins, and in five days the scales fall off. Scarring rarely results, for the corium is affected only where there has been much scratching. The mucosæ are usually involved. The vesicles may be few or numerous, but they are very rarely confluent.



FIG. 39.—Varicella.
From photograph by the author.

The diagnosis between varicella and variola is often very important. Characteristic of the former disease are the occurrence in crops, the slight severity of the initial symptoms, the softness of the papules, and the absence of suppuration. In variola the invasion is severe, the papules are hard, and umbilicated vesicles and

pustules soon make their appearance. In measles there are the prodromal catarrhal symptoms, the larger flat macules, and there is no fluid in the lesions. Scarlatina has a severe invasion, sore throat, a punctate or confluent rash, and neither vesicles nor pustules.

LICHEN PLANUS.

Synonym.—Lichen ruber planus.

Definition.—A chronic circumscribed inflammation of the skin, characterized by the formation of multiple, discrete or confluent, minute, purplish, waxy or scaly, umbilicated papules.

Symptoms and Course.—Lichen planus occurs most frequently as a chronic and localized malady, the more acute and general form of the disease being rare. The site of the eruption is usually on the flexor surface of the forearms, especially around



FIG. 40.—Lichen planus.
From photograph of negress in the author's collection.

the wrists, and on the backs of the hands and feet; but other regions are not infrequently affected, and it occurs occasionally on the palms, soles, and genitals. It is

are, however, on the face and scalp. It is frequently symmetrical. The lesions appear first as extremely minute papules of a characteristic dusky-red or purplish color, with a waxy glance, and sharply differentiated from the surrounding skin. Their sides are steep, and their shape is distinctly angular; while their tops are flat and marked with a central depression or capped with a minute scale. On the palms and soles the individual lesions may be hard to distinguish, the entire epidermis of the affected region being elevated and thickened, cracked in places, of a dusky-purplish hue, and covered with whitish scales. On the mucosæ they appear as whitish flattened papules. They may be scattered or irregularly grouped. As they gradually enlarge to pea-size, adjacent papules coalesce, and thus extensive indurated and scaly areas are formed; but the individual lesions do not increase beyond their original size. After persisting for a long time—months and years—they slowly undergo absorption, leaving atrophic pigmented areas behind. No vesicles or pustules are ever formed, nor are the nails or hair affected.

The subjective symptoms are usually confined to a moderate itching, and it is only in the very extensive forms that it becomes severe. The patients are sometimes debilitated and run down by excesses or overwork, but not infrequently they are in excellent health. The malady occurs with about equal frequency in both sexes; it is seen at all ages, but is most frequent during middle life.

Etiology.—The cause of the disease is unknown. It is not contagious. Most probably Köbner is right in attributing to it a neurotic origin.

Pathology.—As Robinson has shown, the papules of lichen planus are caused by an inflammatory process in the papillæ and the upper portion of the corium, shown by round cell-infiltration and other tissue-changes. In old papules the rete and the corneous layer are hypertrophied as a secondary change. The cell-infiltration is dense, presses on the vessels, and interferes with their nutrition; and the consequent diapedesis of the red blood-cells is the cause of the purplish color of the lesions and the pigmentation after the atrophy of the papules.

Diagnosis.—This rests on the peculiar shape, size, grouping, and appearance of the papules, as described above. Papular eczema, especially when situated on the forearm, may resemble lichen planus, but the papules are rounded and frequently have a little serum at their apices; they are intensely itchy, run a rapid course, leave no pigmentation behind; and other eczematous changes, excoriations, oozing, or crusting will probably be found somewhere on the skin. In the papular syphiloderm the lesions are round-topped and often arranged in crescentic or circular form; they are generally distributed and more or less polymorphic; there is no itching; their color is reddish. Other signs of syphilis are probably present, and the disease responds to antiluetic treatment. In lichen scrofulosus the round papules are grouped upon the trunk and are accompanied by no subjective sensations whatsoever. Finally, in the papular psoriasis the lesions are pink, covered with abundant heaped-up scales, and are situated mostly on the flexor surfaces.

Prognosis.—This is favorable always. The disease is chronic and obstinate, but it tends to recovery.

Treatment.—The general treatment must be tonic and roborant, since many of these patients are anemic and run down. Quinine, iron, and cod-liver oil are useful, together with regulation of the diet and general hygiene. Arsenic is, however, our main reliance, and it must be administered in full doses until the gastric oppression, the sense of constriction of the throat, etc., give warning of approaching intoxication. It is best given in the form of the Asiatic pill (No. 6, p. 46), beginning with two daily, and gradually increasing the amount, or as Fowler's solution, 3 to 10 drops in water three times daily. Joseph especially recommends the hypodermatic use of the drug, for which purpose Fowler's solution, diluted with twice the quantity of water, can be employed in the same doses as *per orem*. Köbner uses the arseniate of soda in the same way. The injections are painless, and the results are said to be brilliant. I have found that the preparation or mode of administration is of less importance than the persistence in the use of the drug for a long period of time.

No. 39. Unna's Carbolic-Sublimate Ointment.

R̄ Acid. carbolic. 20 parts
Hg. chlor. corr. 1 part
Ungt. zinci benzoat. 500 parts

No. 40. Chrysarobin Ointment.

R̄ Chrysarobin 1 part
Adip. lanæ
Aq. rosæ
Adip. suillis 3 parts

Locally, bran and alkaline baths are useful to allay the itching, or the various antipruritic lotions and salves (Nos. 11, 12, p. 56, Nos. 33, 35, 36, p. 78) may be employed. Unna's carbolic-sublimate ointment (No. 39, p. 94) rarely fails to do some good, and should be tried in every case. Chrysarobin has been recommended by Herxheimer (No. 40, p. 94).

LICHEN RUBER.

Synonym.—Lichen ruber acuminatus.

Definition.—A chronic inflammatory disease of the skin, characterized by the appearance of pinhead- to millet-seed-sized, firm, conical, red papules, coalescing into infiltrated scaly patches, and leading sometimes to marasmus and death.

Symptoms and Course.—Lichen ruber is very rare in this country, and is by some authorities considered essentially identical with ordinary lichen planus. Commencing on the trunk, the above-described papules spread over the entire body and even invade the mucosæ. They remain stationary for a long period of time, and are not subject to retrogressive changes. New papules appear between the old ones, and finally the lesions fuse together into larger scaly masses. The integument of the entire body is then infiltrated, so that it is twice as thick as the normal skin; it is dusky reddish brown in color, and rough to the touch like a nutmeg-grater, though



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PHOTOGRAPHURE & COLOR CO., N. Y.

LICHEN PLANUS

PLATE III

no individual papules may be visible; and fissures appear at the joint flexure and at the natural folds. The nails become thickened, dark, and brittle; the hairs lose their luster and fall out.

The malady is an eminently chronic one, lasting for years and steadily advancing. In its first stages the subjective symptoms are limited to a moderate itching; but when the whole skin is affected this becomes more severe, and emaciation, marasmus, and death, without any special lesion that we know of, may occur. The recognition and description of the disease are due to the elder Hebra, and his first fourteen cases ended fatally. As seen to-day, the lesions in the course of time become flatter and paler, and are finally absorbed, leaving pigmented scars behind. Vesiculation, pustulation, or ulceration does not occur.

Etiology.—The cause of the disease is entirely unknown. It is most frequent in middle age, and is seen oftener in males than in females.

Pathology.—This is still unsettled. All the layers of the skin seem to be involved in the chronic inflammatory process, but the cellular increase is most marked in the upper layers of the corium, in the papillæ, and especially around the hair-sacs.

Diagnosis.—The diagnosis can be difficult only on account of the rarity of the malady. The conical red papules, surmounted by a small scale, are characteristic. It must be differentiated from: 1. A general papular psoriasis. This rarely covers the entire body, some portions being always unaffected; there is a comparatively large amount of heaped-up silvery scales; the flexor surfaces are most involved; and the malady comes and goes, the efflorescences getting better and worse from time to time. 2. A general papular eczema. Here we have acute inflammatory papules of a vivid-red color, much itching, weeping surfaces, and a general polymorphism. 3. Lichen planus, which has polygonal violaceous papules, with flat, smooth, waxy, and slightly umbilicated tops. 4. A general papular syphiloderm. This is never entirely universal; it is grouped in circles or crescents; and other symptoms of lues are almost always present. 5. Pityriasis rubra, in which the bright-red color, the apparent atrophy of the skin, and the non-involvement of the nails are characteristic.

Prognosis.—This is good if the disease is properly treated; relapses seldom occur. The bad prognosis of Hebra antedated the introduction of the arsenic treatment.

Treatment.—Arsenic must be given in large and long-continued doses. If symptoms of poisoning occur the dose must be diminished; but the system soon accommodates itself to the drug, and the doses can be increased again. The Asiatic pill (No. 6, p. 46) may be employed, commencing with two and going up to six or more daily; or we may use Fowler's solution by the mouth, or hypodermically, as recommended in lichen planus (p. 94). Iron, cod-liver oil, and other tonics, with general hygienic measures, are also required. Locally, alkaline bran baths and the various antipruritic salves and lotions (Nos. 33, 34, 35, 36, p. 78, etc.) are useful.

DERMATOMYCOSES.

The presence and growth of parasites, vegetable and animal, upon and among the epithelial layers of the skin and in the glandular structures that open into it, cause inflammation of that organ. This is mostly of a superficial character, and its consideration belongs under this heading. The vegetable parasites are fungi belonging to the class of the *Hyphomycetes*, and they cause a series of affections known as the dermatomycoses. In some of them the morphology of the etiological factor is well established, but in others it is still a matter of doubt. All the various forms of ringworm are known to be due to varieties of the *Tricophyton tonsurans*; pityriasis versicolor is caused by the *Microsporon furfur*; but Quincke, Unna, and Jessner have proved that several fungi may cause favus, and the exact nature of the parasite of pityriasis rosea and eczema marginatum is still undecided. The maladies that they cause are naturally all contagious; but the fungi require varying conditions for their growth, and hence their transmission is largely dependent on individual conditions, age, surroundings, and general health.

The *Hyphomycetes* are fungous plants containing no chlorophyl and deriving their nourishment from organic substances. They consist of a network of double-contoured, branched threads or mycelium, constituting the thallus, from which spring upright branches known as the hyphæ, containing the reproductive organs and spores. They are so similar in their size and general structure that the elder Hebra regarded them all as mere varieties of one parasite; but both microscopical investigation and clinical research have shown the erroneousness of this view. The parasitic growth can be readily demonstrated in the epidermic scales and hair-structures after immersing them for a short time in a 10-per-cent. solution of caustic potash.

FAVUS.

Synonyms.—*Tinea favosa*, dermatomycosis favosa, *Erbgrind* (Ger.), *teigne favense* (Fr.).

Definition.—A contagious parasitic disease of the skin, due to the growth in and upon it of the *Achorion Schönleini*, characterized by the appearance of lemon-yellow cupped crusts, and leading to atrophy of the skin and its appendages.

Symptoms and Course.—Favus is a rare disease in this country, almost all the cases that are seen here occurring in emigrants of the lowest class from Russia. It occurs most often on the scalp, but no part of the body is exempt, and Kaposi has even seen it on the mucosæ. It begins as minute pinhead-sized reddish spots around the orifices of the hair-follicles, which soon enlarge and assume a yellowish tinge. The fungoid accumulation grows until the fully developed, small, pea-sized mass, the scutulum, shield, or cup, is formed. This appears as a lemon-yellow disk firmly attached to the skin, and pierced in its center by one or more hairs. Its surface is concave or umbilicated, and its edges are raised; and if it is forcibly removed it is found that its concave under

surface is situated in a red and moist cup-shaped depression of the epidermis. It is formed of a series of concentric layers of a friable yellow material, which excavates and destroys the epidermic layers by its pressure. In the human subject this does not extend below the superficial layers of the skin; but Sherwell has seen mice in which the bones of the cranium were perforated by the pressure of the growing cup.

The single scutula may grow until they are $\frac{1}{4}$ of an inch or more in size. Adjacent ones then coalesce, and thus irregular, dirty, whitish-yellow, mortar-like masses are formed, and the characteristic cups are seen only at the edges of the patch, where the disease is progressing. Left to themselves, the cups finally fall off, leaving depressed, circumscribed, hairless, atrophic areas behind. More or less eczematous inflammation and suppurative folliculitis may accompany the disease, which in old cases may be very extensive. The hair in scalps affected with favus has a characteristic dusty, lusterless appearance, and feels dry and wiry to the touch. The progressive pressure-atrophy finally leads to the entire destruction of the papillæ and the glandular structures. The odor of favus is characteristic and mouse-like.

Favus of the non-hairy parts is extremely rare, and usually occurs in connection with favus capitis. The lanugo hair-follicles are more superficial than those of the scalp, and the parasite does not find as good a soil to grow on. The scutula are single or few in number, and are usually surrounded by a reddish, scaly, or vesicular zone, looking very like ring-worm. The duration of favus corporis is generally short.

Favus of the nails, onychomycosis favosa, is very rare, and occurs from inoculation of the finger-nails from scratching the head. Deep-seated yellowish spots,



FIG. 41.—Favus corporis.
Case of Professor Elsberg, Warsaw, Russia.

due to the accumulation of the parasitic growth, appear in the nails, and they become dry, lusterless, furrowed, and raised.

The malady is a very chronic one, usually beginning in childhood, and lasting for twenty years or more, so long as there are any hair-follicles left to be invaded. It sometimes, however, ends spontaneously. The subjective symptoms are limited to itching.

Etiology.—The *Achorion Schönleinii*, discovered by Schönlein in 1839, is the etiological factor of the disease, as has been proved experimentally by the inoculation of pure cultures. It grows on the skins of rabbits, cats, dogs, and mice, as well

as on that of the human subject, and in a good many cases it originates in the household cat, who gets it from the mice. The parasite requires to be left undisturbed for two or three weeks before it obtains a firm hold on the tissues; hence people of cleanly habits are not liable to contract it. It is far commoner in children than in adults. Only a single member of a family is attacked, as a rule; but this is not always the case, and Dühring mentions one instance in which ten cases were found in a single household.

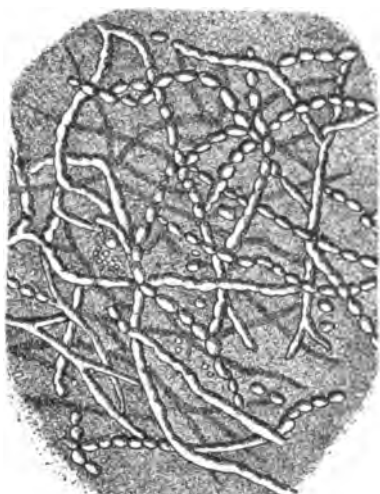


FIG. 42.—*Achorion Schönleinii*.
x 400. After Joseph.

Pathology.—A moderate amount of inflammation and cell-infiltration is caused by the growth of the parasite, which consists of an abundant network of mycelial threads and many spores. The mycelium is composed of flat threads about $\frac{1}{800}$ of an inch in diameter, divided by partitions into elongated cells. Inside these the oval spores or conidia

develop; but large masses of them are also found lying free. The fungus in its downward growth presses on the succulent rete-cells and causes their atrophy; it also invades the hair and corionic papillæ, and destroys them. Passing through the external root-sheath, it enters the hair and grows in the marrow substance. When the glandular structures are entirely destroyed the parasite no longer finds a suitable soil, and disappears.

Diagnosis.—This is usually readily made. The destruction of the hair-follicles and the wiry condition of the hairs that remain; the sulphur-yellow, round, concave, friable scutula pierced by hairs; the depressed and atrophic but otherwise uninjured skin below them; the sparse, badly nourished, and wiry hairs that are left; the mouse-like odor; and, finally, the microscopic demonstration of the fungus in the crusts, will prevent error. When the disease is extensive the heaped-up mortar-like crusts may resemble the accumulated secretion of an impetiginous eczema; but these latter are greenish yellow in color, and an inflammatory, moist, and weeping surface



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FAVUS
PLATE XI

is found under and around them. Ringworm may in some cases resemble favus very closely, but there are no distinct cups or mortar-like masses or atrophy, and the frayed, nibbled-off hairs are characteristic. Microscopically the parasites in both diseases are too similar to be readily differentiated.

Prognosis.—Favus, once deemed incurable, is not so rebellious to modern methods; but it is still very difficult to eradicate. In every case there is a more or less extensive permanent atrophy of the skin and destruction of the glandular structures. On the non-hairy parts it is readily removed, and sometimes disappears spontaneously. Favus of the nails is as obstinate as that of the scalp.

Treatment.—This consists of the employment of epilation and parasiticide applications, and always requires much patience and a long period of time. The hair should be cut short over the entire scalp, and a daily systematic removal of the affected hairs with the epilating forceps must go on simultaneously with whatever treatment is adopted. The crusts should be softened by binding cloths soaked in 1 per cent. naphtholated oil (No. 41, p. 100) or 2 per cent. salicylated or 5 per cent. carbolated oil on the scalp under an oilskin cap, until all the visible crusts can be removed with a spatula. The scalp is then thoroughly washed with the green soap tincture (No. 5, p. 43), and the resorcin-salicylic-sulphur paste (No. 42, p. 100) is applied to the scalp. A 10- to 20-per-cent. pyrogallol ointment, or a 20-per-cent. oleate-of-mercury ointment, or the balsam of Peru, or a 10-per-cent. chrysarobin ointment (No. 40, p. 94) may also be employed. These are best first rubbed in with a stiff-bristle brush before being applied on cloths. The treatment must be persisted in for five or six days, and then several days can be allowed to elapse to see how many new scutula make their appearance. The course is repeated again and again until no new ones are seen. If the treatment irritates the scalp too much, it can be stopped from time to time, and a mild sublimate ointment (No. 43, p. 100) used instead.

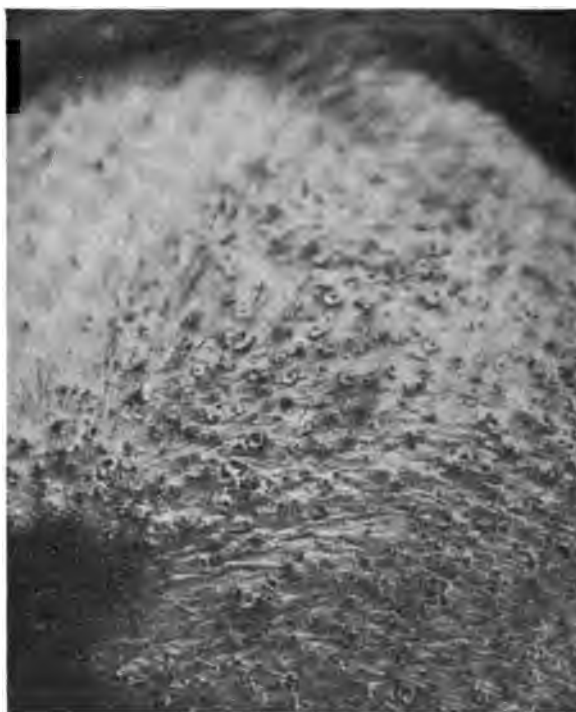


FIG. 43.—Favus capitis.
Case of Dr. J. F. Aitken.

Favus of the body is readily removed by means of frictions with the tincture of green soap (No. 5, p. 43) or the use of the pyrogallol ointment (No. 44, p. 100).

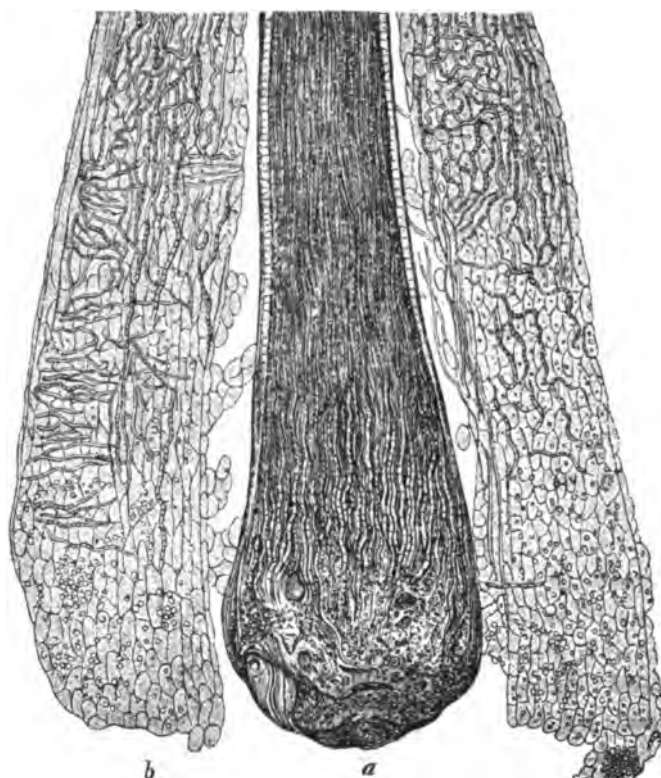


FIG. 44.—Hair-shaft and root-sheaths affected with favus.
After Kaposi.

Favus of the nails is obstinate, and the treatment must consist in scraping away with a knife as much as possible of the diseased structure, and applying mercurial plaster or the sublimate ointment (No. 43, p. 100).

No. 41. Naphtholated Oil.

R̄ β.-naphthol . . . 1 part
Ol. olivæ . . . 100 parts

No. 42. Resorcin-Salicylic-Sulphur Paste.

R̄ Resorc. albissim.
Ac. salicyl.
Sulphur. depur.
Amyli
Zinc. oxid. 5. 1 part
Petrolati 5 parts

No. 43. Sublimate Ointment.

R̄ Hydrarg. chlor. corr. . . 1 part
Ol. amygdal.
Adip. lanæ 500 parts

No. 44. Pyrogallol Ointment.

R̄ Pyrogallol 1 part
Petrolati 20 parts

TRICHOPHYTOSIS.

The presence and growth in the skin of the *Trichophyton tonsurans*, discovered by Gruby and Malmsten in 1844, cause an inflammation of that organ, the clinical appearance of which varies in different portions of the body, and which has been given different names in accordance with the region affected. It was formerly supposed to consist of several distinct diseases, and the varieties do indeed differ so much that their symptoms, course, and mode of treatment require separate consideration. Certain general considerations are, however, in place here.

Definition.—A contagious vegetable parasitic disease of the skin, caused by the *Trichophyton tonsurans*, and characterized by the presence of inflammation of the skin and destruction of its glandular appendages.

Etiology.—The exact botanical position of the ringworm parasite is not yet settled, and Sabouraud and others have described several varieties in different forms of the disease. The consensus of opinion, however, is that there is but one parasite, and that the different forms are due only to different conditions of soil, etc. A secondary coccigenic infection is frequently added to the fungoid one, giving rise to deep-seated suppuration and abscess formation. It is eminently contagious, and much more common than favus. It affects, in its various forms, all ages and conditions, and is usually transferred from one patient to another through toilet utensils, articles of wearing apparel, etc. Dogs, cats, horses, and other animals are subject to ringworm, and are not very infrequently the sources of contagion.

Pathology.—The trichophyton parasite consists of mycelium and spores, the former being double-contoured, branched threads, partitioned into cells, and similar in appearance, but more slender, than those of favus. The rounded spores are exceedingly abundant. It grows underneath the superficial layers of the corneous layer, and may invade the hair-bulbs and -shafts. It causes a superficial or deep-seated reactive inflammation, marked by scaling, redness, papulation, vesiculation, or, when pus infection has also occurred, follicular or more diffuse suppuration. The mycelium and spores can generally be readily demonstrated in the epidermic scales or the hairs after maceration in dilute liquor potassæ.

Prognosis.—This is good in all cases if appropriately treated. Care and labor and a long period of time are required, however, in many cases.

TRICHOPHYTOSIS CAPITIS.

Synonyms.—Tinea tonsurans, herpes tonsurans, ringworm of the head, *scheerende Flechte* (Ger.), *teigne tonsurante* (Fr.).

Definition.—Ringworm of the head, characterized by circular or diffuse, inflamed, scaly, or tumid patches, with diseased and broken-off hairs.

Symptoms and Course.—Ringworm of the head is of fairly common occurrence

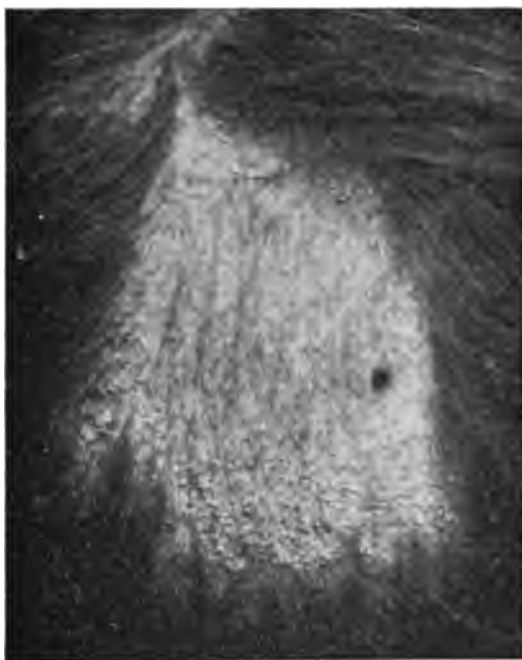


FIG. 45.—Trichophytosis capitis.
From photograph by the author.

most of them are broken off within a line or two of the surface of the skin, their frayed and ragged ends looking like a coarse stubble covering the affected area.

This is the usual form of the disease; but sometimes there is associated with it a suppurative folliculitis of the hair-sacs, forming the condition known as kerion. The affected portion of the scalp is covered with pustules; there is considerable swelling; and crusts and exuding surfaces cause it to greatly resemble a pustular eczema. In very old cases, again, there are no circular areas, the whole scalp is covered with dry scales, the scattered hairs that are present are evidently diseased, and the entire appearance is that of a seborrhea or a chronic eczema.

Etiology.—The common sources of contagion are the hats, hair-brushes, towels, and bed-linen used in common by in-

in this country, and is almost always seen in children. It begins as a red macule, papule, or group of vesicles around the opening of a hair-follicle, which gradually enlarges into a round, grayish-red or slate-colored, slightly scaly patch. It may remain stationary at any size, and rarely exceeds an inch and a half in diameter. It may be single or there may be a number of spots; adjacent patches may coalesce, and thus a large portion of the scalp, or even its entire area, may be affected. At the margins of the patches there are usually found inflammatory papules, vesicles, or pustules. The hairs are characteristically affected as the fungus grows down into the follicles and invades the shafts. The few long ones that remain look dull and lusterless, and are covered with a grayish dust; but



FIG. 46.—Trichophytosis capitis of long standing.
From photograph by the author.

fect and healthy children. The impossibility of enforcing the necessary hygienic measures in institutions where large numbers of children are herded together explains its epidemic appearance.

Pathology.—The parasite grows first in the epithelial layers of the scalp, but soon invades the hair-follicles and -shafts. The hair-bulbs are distorted and swollen, and when pulled out are found covered with a mass of white fungus. The shafts are filled with mycelium and spores, looking as if stuffed with fish-roë; and, as soon as they lose the support of the follicle walls, split longitudinally, and are broken off.

Diagnosis.—This is readily made in typical cases, for the round, scaly patches and the nibbled-off, frayed-out hairs are characteristic. But in the chronic and more diffuse cases it is sometimes very difficult. The malady often resembles a seborrhea; and in other cases ringworm of the scalp must be differentiated from squamous eczema, alopecia areata, psoriasis, and favus. Seborrhea of the head, causing baldness, is rare in children; the scales are fatty, there are no broken-off hairs, and it is from the beginning a diffuse affection, and does not commence as a discrete ring. The diagnosis from alopecia areata may also be difficult; but in that disease there is little or no scaliness, no inflammation, and few or no hair-stumps. Eczema squamosum is a diffuse affection, and the hairs are firm and unbroken. In psoriasis the scales are thick and silvery white; there is no defluvium; and patches of the disease will probably be found on other portions of the body. In favus the peculiar sulphur-yellow cups will always appear if the disease is left untreated for a week or so, and in old cases the presence of cicatricial tissue is characteristic. Finally, the microscope must be resorted to in doubtful cases.

In many instances, however, and more especially in the chronic epidemics that occur in public institutions, the question of the presence or absence of ringworm is often a most difficult one to answer, since the large number of the cases renders individual microscopic examination impracticable. Here Duckworth's chloroform test may be of value. A few drops are poured upon the affected area and allowed to

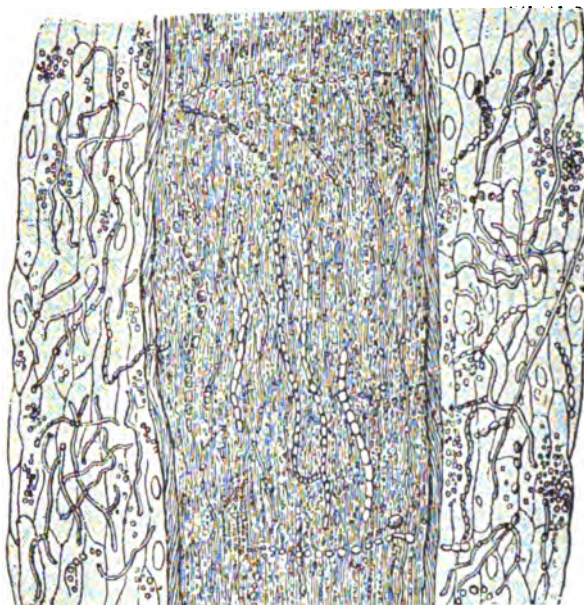


FIG. 47.—Hair and root-sheath of trichophytosis capitis.
After Kaposi.

evaporate; the mouths of follicles and the hairs that are affected turn yellowish white in color, and the scalp looks as if powdered with sulphur. The addition of a little oil restores it to its former appearance.

Prognosis.—Many cases are very obstinate, especially in badly nourished children, and the treatment of ringworm of the scalp is still a very unsatisfactory chapter in dermato-therapeutics. Cases in which the characteristic appearances have vanished, but in which a persistent scaliness of the scalp remains, are not cured; a lens will reveal the frayed-out hairs, and the persistent use of the microscope will show that the parasite is still present. A cure is always a matter of months, and sometimes of years.

Treatment.—Good food, fresh air, scrupulous cleanliness, and the use of tonics are important, in that they render the soil less suitable for the growth of the trichophyton parasite. The hair should be cut short to facilitate the recognition and treatment of affected areas. The scalp should be thoroughly washed at least twice a week with the green soap tincture (No. 5, p. 43), and a mixture of equal parts of alcohol and chloroform should be employed to remove the scales and fat before any parasiticide is applied. Epilation is required in many of the cases, the hairs remaining on the patch, and especially at its margins, being removed with the flat, broad-bladed epilating forceps. Thus the fungus-filled hairs are gotten rid of and the mouths of the follicles are opened so that the remedies employed can reach their depths.

Of the many applications that are used corrosive sublimate is perhaps the most valuable. In a strength of 2 grains to the ounce of alcohol it should be thoroughly rubbed into the scalp with a brush or sprayed on it twice daily. It may also be used in ointment form, 1 to 250 or less (No. 43, p. 100). The compound tar spirit (No. 45, p. 104) and the sulphur-soap spirit (No. 46, p. 104) are favored by Wolff, Joseph, and others. The oleates, especially those of copper and mercury, are highly recommended by Shoemaker (No. 47, p. 105). A 5-per-cent. naphthol salve (No. 48, p. 105) is valuable in very young children, and in recent cases chrysarobin (No. 40, p. 94) is undoubtedly effective; but it must be used carefully, the eyes being protected and the head tightly covered. Blistering the surface with croton-oil, either pure or mixed with equal parts of olive-oil, and thus setting up a suppurative folliculitis, is required in very obstinate cases. The application should be made by the physician himself, care being taken to localize the action of the oil to the affected area. The part should then be poulticed and epilated.

No. 45. Compound Tar Spirit.

| | | |
|----|-----------------------|----------|
| Rx | Ol. rusci | 25 parts |
| | Spts. vini | |
| | Ether. sulph. | āā. 40 " |
| | Spts. lavand. | 1 part |

No. 46. Sulphur-soap Spirit.

| | | |
|----|--------------------------|---------|
| Rx | Sulphur. lot. | 1 part |
| | Tr. saponis vir. | 5 parts |

No. 47. Copper Oleate Ointment.

℞ Cupri s. hydrarg. oleat. . . . 1 part
 Ol. olivæ 1 "
 Adip. lanæ 10 parts

No. 48. Naphthol Ointment.

℞ Naphthol 1 part
 Ol. olivæ 2 parts
 Adip. lanæ 20 "

In any case, the patient should be as far as possible segregated, and care should be taken that no other child uses the brushes, towels, clothing, etc., without thorough disinfection with strong bichloride solutions. A cap should be worn all the time, and this should be either so cheap that it can be frequently renewed, or it should be fitted with a paper lining that can be changed every day or two. A modified treatment must be persisted in long after the disease is apparently cured. Two or three times a week a bichloride lotion or ointment (No. 43, p. 100, No. 49, p. 108) should be thoroughly applied.

TRICHOPHYTOSIS BARBÆ.

Synonyms.—*Tinea barbæ*, *tinea sycosis*, *sycosis parasitica*, *dermatomycosis barbæ*, ringworm of the beard, barber's itch, *Bartflechte* (Ger.), *trichophytie sycosique* (Fr.).

Definition.—Ringworm of the beard, characterized by inflammation of the skin, with the appearance of papular, tubercular, and pustular lesions, and destruction of the hairs.

Symptoms and Course.—Ringworm of the beard differs in appearance from the similar affection on other parts of the body in consequence of the anatomical peculiarities of its site. It begins as one or more pea-sized, or larger, circular red spots, with some papules and vesicles, and covered with branny scales, the hairs over the affected area being early loosened or broken off. Soon, however, if unchecked, it assumes the more characteristic form of the severer variety of the disease. The adjacent inflammatory areas coalesce, and deep-seated nodular lesions make their appearance. Large infiltrated masses are thus formed, of a deep purplish color, and tender and boggy to the touch. The subcutaneous connective tissue is undermined, and pus or a foul-smelling seropurulent secretion exudes from the orifices of the hair-follicles. This crusts upon the surface, and mats together the hairs over the whole swollen and infiltrated area. A condylomatous papillary growth from the surface of the mass frequently occurs, and the neighboring lymphatic glands are swollen and tender. The hairs over the affected area may fall out spontaneously, or they may be broken off close to the skin and frayed; in any case, they lie entirely loose in their sheaths, and may be removed, as Anderson says, as readily as pins from a pincushion. Their sheaths are white from the mass of fungus material adhering to them. The process finally results in the complete destruction of the glandular structures of the skin, and atrophic, cicatricial, hairless areas are left behind.

The subjective symptoms are not severe, and are confined to moderate burning and itching. The disease as a rule gradually spreads over the entire area of the bearded face. Though acute in its immediate manifestations, the process is a chronic one, and may last for months or years. Ringworm of other portions of the body is sometimes present at the same time.



FIG. 48.—Trichophytosis barbæ.
From photograph by the author.

Trichophytosis barbæ of the classical form is not a common disease. In New York a superficial form is, in my experience, much more frequently met with, in which the malady presents the appearance and runs the course of the ordinary ringworm of the body.

Etiology.—The deep subcutaneous nodules and abscesses are caused by a secondary coccigenic infection following after the fungoid one. The contagion is usually spread in the barber-shops, and not by the razor, as is generally supposed, but by the towels, lather-brush, and the barber's fingers; and thus the endemics that are frequently observed originate. It is much less commonly gotten from animals or children affected with ringworm.

Pathology.—The parasitic fungus, which has been already described, grows in the epidermis and early invades the hair-follicle and loosens the hair in its sheath. The perifollicular inflammation is very extensive.

Diagnosis.—The red scaly spots, deep tubercular infiltrations, broken-off hairs, the quick spreading, and the microscopic demonstration of the parasite are sufficiently characteristic. Nevertheless trichophytosis barbæ requires to be carefully differentiated from two other affections of the beard which are included under the popular designation of barber's itch, viz., perifolliculitis barbæ and eczema barbæ. In perifolliculitis the course of the disease is slower; it begins most frequently on the upper lip; the hairs are only affected later, after suppuration of the follicles has set in; there are no deep tubercular infiltrations or papillary growths; the trichophyton is not present; and the small, discrete pustules, each pierced by a hair, are characteristic. Eczema of the beard is also most frequent on the upper lip, and a catarrhal or suppurative rhinitis is often present; it is an entirely superficial affection, with vesicles, serous discharge, and crusts; the parasite is not present; the hairs are not affected; no scar tissue results; and non-hairy parts in the neighborhood are usually involved. A papular syphiloderm of the bearded face may occasionally resemble ringworm; but the circular arrangement of the tubercles, the ulceration, the absence of deep-seated suppuration and of the fungus, with the history, should prevent mistake.

Prognosis.—These cases are often very rebellious. Left to itself, the process goes on until all the hairs of the beard are destroyed.

Treatment.—In the superficial ringed form any of the parasitic applications (No. 23, p. 64, No. 34, p. 78, No. 38, p. 82) may be used. In obstinate cases it is sometimes necessary to have recourse to a strong sublimate spirit or lotion (No. 49, p. 108), which must be cautiously dabbed over the surface two or three times daily and allowed to dry. In the deeper-seated suppurative forms the hair of the beard and mustache must be cut close with the scissors; shaving must not be resorted to, because it spreads the infection to neighboring healthy parts. Epilation is required in every case. It can be done readily and painlessly, for the affected hairs are so loose in their sheaths that they come out with ease. It must be done systematically, an area of skin being cleared each day. The healthy portion of the beard should be protected from further infection by dabbing sublimate spirit (No. 49, p. 108) over it once daily. The affected part is then washed thoroughly with the green soap tincture (No. 5, p. 43), then with chloroform and Lassar's paste (No. 2, p. 43) or Wilkinson's ointment (No. 38, p. 82) or the tannin-sulphur paste (No. 50, p. 108), applied twice daily for several days, until irritation and peeling of the skin occur. Having thus removed the scales and a large quantity of the fungus, the part is ready for the parasiticide applications.

Of parasiticides the most efficacious is perhaps the 10-per-cent. chrysarobin colloidion (No. 51, p. 108), which must be applied to the part with a stiff brush twice a day for three or four days, and then stopped until desquamation occurs. There need be no fear of using chrysarobin on the face in this form; it causes no trouble, save for a slight discoloration of the skin. The oleate of mercury, 10-per-cent. solution in oleic acid, or the copper oleate ointment (No. 47, p. 105) or the sublimate ointment (No. 43, p. 100) may also be used.

No. 49. Sublimate Spirit.

℞ Hydrarg. chlor. corr. . . . 1 part
 Spts. vini rect. . . . 500 parts

No. 50. Tannin-Sulphur Paste.

℞ Acid. tannic. . . . 5 parts
 Lac. sulph. . . . 10 "
 Petrolati 50 "
 Zinci oxidi
 Amyli aa. 17.5 "

No. 51. Chrysarobin Collodion.

℞ Chrysarobini 1 part
 Collodion flexile 10 parts

The abscesses must be freely opened, and the deep infiltrations are best treated by the application of the mercury-carbolic plaster mull, which has an excellent effect and quickly causes their resorption. Papillary growths must be scraped away, and the free use of the curette on the deep infiltrations after their incision removes large masses of fungus and greatly hastens their cure. The application of poultices, as recommended by some authorities, only promotes the growth of the parasite.

TRICHOPHYTOSIS CORPORIS.

Synonyms.—*Tinea circinata*, herpes circinatus, ringworm of the body, *herpes circiné* (Fr.).

Definition.—Ringworm of the general integument, characterized by macular, vesicular, papular, or squamous lesions of circular outline, with scaly or normal centers.

Symptoms and Course.—Ringworm of the body in its milder varieties, with one to half a dozen lesions, is a common disease; but the more chronic and generalized forms are rarely observed in this country. It begins as a small, circular, slightly raised reddish macule, sharply circumscribed, and removable by pressure. It spreads peripherically until it may attain the size of a large coin, and while the advancing margin remains red, the color of the center gradually fades into a pale yellowish pink. Fine branny gray scales cover the patch. Adjacent patches may coalesce, forming irregular circinate areas, and in rare instances concentric rings of parasitic growth may appear. This form, in which ringworm of the body always begins, is known as herpes tonsurans maculosus, and is most commonly found on the exposed parts of the body, where there is but little heat, moisture, and friction, as the face, neck, and arms.

Occasionally a row of vesicles filled with a clear serum marks the edges of the patch, forming the variety known as herpes tonsurans vesiculosus. They soon dry up into fine branny scales. Where there is much friction and heat, as in the inframammary region in stout persons, the parasitic growth is more abundant, and the



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TRICHOPHYTOSIS.

PLATE VIII.

formation of inflammatory papules gives us the variety known as herpes tonsurans papulosus. Finally, when there is much scaling, we have herpes tonsurans squamosus. In the chronic generalized cases the lesions are ill defined, irregular or confluent, and scattered over the surface of the body as reddish scaly spots.

Ringworm of the body occurs especially in the young, and is most common at the seasons when the heat and moisture in the atmosphere are most favorable to fungus growth. It may disappear spontaneously in a few months or weeks, or it may last for years. There is a good deal of itching in some cases, and secondary scratch effects are not uncommon.

Etiology.—Not all individuals are susceptible to ringworm infection, and the condition of the skin and of the general health are undoubtedly important factors in its occurrence. It is rare in infants and in adults, and occurs most commonly in weak, anemic, and badly nourished children, and those that live in damp, unhealthy dwellings. It is often contracted from cats, dogs, horses, and cattle, and is very contagious.

Pathology.—The presence of the fungus causes a more or less superficial eczema or dermatitis, with vesiculation, papulation, or scaling. Its location is in the corneous layers, and the lanugo hairs are not affected.

Diagnosis.—In addition to the clinical characteristics above mentioned, the presence of the parasite is readily demonstrated in ordinary cases under the microscope. In the chronic cases of disseminated ringworm the parasite is much more difficult to find. The malady requires to be differentiated from: 1. Eczema, which has no sharp margins, and is rarely circular or clearing in the center, itches much more, and is much more frankly inflammatory. 2. Seborrhea, which on the chest and back often looks much like ringworm, having circular scaly patches with clearing centers; the greasiness of the scales and the almost entire absence of inflammation will serve to distinguish it. 3. Psoriasis, which frequently appears as rings with cleared centers, but which the abundance of the dried silvery scales, the absence of exudation, vesicles, or papules, and the characteristic location, will sufficiently distinguish,



FIG. 49.—Trichophytosis corporis.
From photograph by the author.

Prognosis.—Ringworm of the body is readily cured, but relapses not infrequently occur and prolong the cases.

Treatment.—The parasite is superficially placed, and has but a feeble hold upon the skin. After the removal of the superficial scales with the tincture of green soap

(No. 5, p. 43), or by the use for a day or two of the pure green soap spread upon a piece of lint, the application of almost any of the ordinary parasitocides will suffice to remove the fungus. Corrosive sublimate in 1-per-cent. solution may be dabbed on the patches once a day, and allowed to dry; or the tincture of iodine, or carbolic acid in glycerin, 1 to 16, or the white precipitate ointment, may be employed. I prefer the chrysarobin collodion (No. 51, p. 108), painted over the patch every day or every other day. Kaposi's naphthol ointment is recommended (No. 37, p. 82) by Lassar. Tar or sulphur ointments (Nos. 22, 25, p. 64) or Lassar's paste (No. 2, p. 43) may be employed in obstinate cases. Morris's thymol-chloroform oil is also beneficial (No. 52, p. 110).



FIG. 50.—Dermatomyces flexurarum.
From photograph by the author.

No. 52. Morris's Thymol-Chloroform Oil.

| | | | | |
|-------------|---|---|---|---------|
| Rx Thymol. | . | . | . | 1 part |
| Chloroform. | . | . | . | 4 parts |
| Ol. olivæ | . | . | . | 12 " |

Pityriasis rosea, described by Gibert as a special disease, is probably only a generalized form of ringworm of the body.

TRICHOPHYTOSIS CRURIS.

Synonyms.—Eczema marginatum, dermatomycosis marginata, ringworm of the crotch.

Definition.—Ringworm of the genitocrural region, characterized by the appear-

ance of spreading, circular, discolored patches with inflammatory margins and grayish or brownish centers.

Symptoms and Course.—Ringworm of the crotch is most common in hot and damp climates, but is not infrequently seen here. It occurs on the parts that are in contact, and therefore most exposed to the effects of heat, moisture, and friction.



FIG. 51.—Pityriasis rosea.
Case of Dr. J. F. Aitken.

It is most frequent in the genitocrural fold, and spreads from thence to the inside of the thigh, the anal and suprapubic regions, the penis and scrotum being usually free. Much more rarely it affects the axillary and inframammary regions. It begins as a rounded, scaly, slightly raised reddish disk spreading peripherically and paling at the center. The margins are markedly inflammatory and are studded with papules and vesicles. The central portions may be reddened, moist, and eczematous, or pale and slightly discolored. Adjacent patches coalesce, and thus large symmetrical areas of the disease, with crescentic and sharply marked borders, are formed. Considerable thickening of the skin finally results. The itching is very intense, and scratch-marks and excoriations are common. The malady is a very

chronic one, and may last for years; it shows no tendency to spontaneous healing. The hairs are never affected.

Etiology.—The dependence of the disease upon the presence of the trichophyton parasite has been proved by Köbner, Pick, and Kaposi. The contact of profusely sweating surfaces and the maceration of the skin that ensues seem to be necessary for its growth.



FIG. 52.—Trichophytosis cruris.
From photograph by the author.

Diagnosis.—The crescentic patches with elevated brownish-red margins and discolored centers, the intense itching, and the location, are sufficiently characteristic. The disease requires to be differentiated from an eczema intertrigo of the genitocrural regions, which has a red, frankly inflammatory, and freely secreting surface, most inflamed in the center of the patch, an irregular, ill-defined margin, and vesicles and papules outside the area affected.

Prognosis.—The malady is not very contagious, and men affected with it do not usually give it to their wives. Though curable, it is often very obstinate, and relapses frequently occur.



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CHROMOPHYTOSIS
PLATE XXIII

Treatment.—After thorough preliminary washing with the tincture of green soap (No. 5, p. 43), Wilkinson's ointment (No. 38, p. 82) should be applied for several days, followed by naphthol in 5-per-cent. ointment (No. 48, p. 105) or in 1-per-cent. spirit or oil (No. 41, p. 100). This is perhaps the best means at our command for the eradication of the disease. Chrysarobin in 10-per-cent. ointment (No. 40, p. 94) or as collodion (No. 51, p. 108), applied to the patch once daily for several days, and the parts then allowed to remain without washing for several days more, is also efficacious.



FIG. 53.—Trichophytosis cruris.
From photograph by the author.

The ichthyol-mercury ointment is employed by Wolff (No. 53, p. 113). Joseph recommends that in obstinate cases the whole surface should be touched with a 10-per-cent. solution of caustic potash, followed by the application of a zinc paste (No. 54, p. 113), and treatment completed by the use of Wilkinson's ointment (No. 38, p. 82). The menthol or carbolic spirit may be used to relieve the itching (Nos. 33, 34, p. 78).

No. 53. Ichthyol-Mercury Ointment.

R̄ Ammon. sulph-ichthyol. . . 1 part
Ungt. hydrarg. ammon. . . 10 parts

No. 54. Zinc Paste.

R̄ Terr. silic. . . . 10 to 20 parts
Ungt. zinci ox. . . . 80 "

Prophylaxis must consist of frequent washing, followed by the free use of a zinc or other dusting powder (No. 18, p. 61). The parts should be kept separated by a pad of absorbent cotton, and a suspensory bandage should always be worn.

CHROMOPHYTOSIS.

Synonyms.—Pityriasis versicolor, tinea versicolor, dermatomycosis furfuracea, *Kleinflechte* (Ger.).

Definition.—A vegetable parasitic disease, characterized by the appearance of yellowish or brownish slightly furfuraceous macules or larger areas, and caused by the growth upon the skin of the *Microsporon furfur*.

Symptoms and Course.—Chromophytosis is a very common disease, more especially in those suffering from phthisis or hyperidrosis. It begins as small pinhead- to pea-sized rounded macules, situated around the orifices of the hair-follicles. They

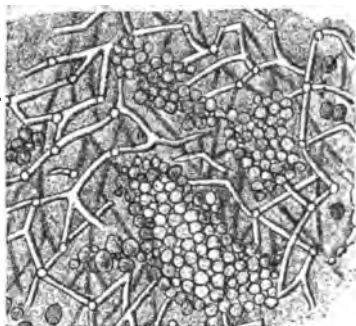


FIG. 54.—*Microsporon furfur*.
x 600. After Joseph.

are very slightly elevated, and are covered with minute grayish-white scales, which can be rendered more evident by scraping. Their color varies from light yellowish brown and buff to a deeper reddish tint; they may be few in number or numerous, and in the latter case they frequently enlarge and coalesce into irregular areas of varying size. They are found upon the covered portions of the body, most often on the chest, abdomen, and back; the neck and the backs of the hands are rarely affected, and the face, palms, and soles are always free. Subjectively, slight itching is the only symptom. The malady occurs chiefly in adults, and is rare in children and the aged. Its duration is entirely indefinite; it may last months or years. In exaggerated forms the entire trunk may be covered.

Etiology.—Chromophytosis is caused by the growth on the skin of the *Microsporon furfur*, discovered by Eichstädt in 1846. The parasite does not grow on parts exposed to the light and that are frequently washed; and lowered general nutrition and defective hygiene of the skin, more especially when combined with excessive sweating, are the factors that favor its development. It is but very slightly contagious, and examples of direct transmission from sleeping together and using the same towels, etc., are rare.

Pathology.—The parasite grows very luxuriously in the upper cells of the corneous layer, and the furfureaceous scales are almost entirely composed of its mycelium and spores. The hairs are not invaded. The mycelium is very like that of the trichophyton, but slenderer, and the spores are



FIG. 55.—Chromophytosis.
From photograph by the author.

collected in groups or appear at the ends of the mycelial threads. The exact botanical position of the parasite is still undecided.

Diagnosis.—The sharply limited brownish spots, the slight scaling, and the characteristic location sufficiently distinguish the disease. The microscopic demonstration of the parasite is readily made if a few of the scales are put on a slide with a drop of dilute liquor potassæ. In chloasma there is no scaling and no parasite; it occurs on the uncovered parts, and cannot be removed by scratching. Seborrhea has an inflammatory margin of red papules; the scales are greasy and more abundant, and no parasitic fungus is present. A macular syphiloderm may occasionally resemble chromophytosis, but its color is more coppery, there is no itching and no parasite, and other symptoms of lues will almost certainly be present.

Prognosis.—This is good, for the parasitic growth is easily removed.

Treatment.—Prophylaxis consists in frequent bathing, together with the treatment of the hyperidrosis. The underclothing should be frequently changed, and, especially if it is of flannel, should be well sterilized by boiling before it is used again.

Treatment of the disease itself consists in the thorough removal of the scales and superficial masses of the parasite by the free use of the tincture of green soap (No. 5, p. 43) and hot water, after which any of the ordinary parasitocides may be employed. Sulphur paste or ointment (Nos. 24, 25, p. 64) or Wilkinson's ointment (No. 38, p. 82) or naphthol in ointment or oil (No. 37, p. 82, No. 41, p. 100) may be used for from four to eight days, until scaling sets in, when a hot bath may be taken. The tar spirit (No. 10, p. 56) and the sublimate spirit (No. 49, p. 108) are also efficacious. The naphthol green soap spirit (No. 55, p. 115) is highly recommended by Joseph. I use the hyposulphite of soda as a lotion (No. 56, p. 115), and find it sufficient in almost all cases. One very obstinate and extensive case in my experience resisted all manner of treatment, but was finally cured by a course of prolonged sea-baths.

No. 55. Joseph's Naphthol Green Soap Spirit.

R̄ Naphthol 5 parts
Solve in spir. vini rectific. q. s.
Sapo. virid. ad. 100 "

No. 56. Sodæ Hyposulphite Lotion.

R̄ Sod. hyposulphitis 1 part
Aquæ 8 parts

Erythrasma, described as a distinct disease by some authorities, is probably a form of chromophytosis affecting the upper and inner surfaces of the thighs, and often complicated with eczema intertrigo. Its dark red color and location are characteristic.

The animal parasites of the skin belong to various classes, and may be divided in a general way into the *Dermatozoa*, living in the skin, and including the itch-insect

and some less common parasites, and the *Epizoa*, living on the surface of the integument or in the hair or the clothes, such as lice, fleas, bedbugs, etc. They are all transferable, though all persons are not equally liable to their invasion; they are



FIG. 56.—Erythrasma.
From photograph by the author.

all more or less itchy, causing scratching, which leads to excoriations, blood-crusts, papules, vesicles, pustules, and pigmentation of the skin. Most of them belong to the class of the *Acarina*. The important ones are the itch-insect and lice, and only the maladies that they occasion will be considered.

SCABIES.

Synonyms.—The itch, *Krätze* (Ger.), *Gale* (Fr.).

Definition.—A contagious animal parasitic disease, due to the presence in the skin of the *Acarus scabiei*, and characterized by itching and by varying evidences of the secondary general dermatitis, papules, vesicles, pustules, crusts, excoriations, and pigmentations.

Symptoms and Course.—The itch is a very common disease in certain regions; in England, according to Crocker, it forms 8 per cent. of all cases, while M'Call Anderson found it in one quarter of all cases seen in dispensary practice in Scotland. It is common also in many other parts of Europe and in Asia; but in the United States Bulkley places the percentage of its occurrence as low as 2. Increasing emigration has made it more common, especially in the seaport towns.

The itch-insect itself causes but few symptoms, especially at first, when present only in small numbers; but it multiplies rapidly, and the new broods, burrowing

into the skin, soon cause an irritation and itching that are generally quite severe, though they vary in intensity in different persons. They are worst at night, when the patient is warm in bed, and the parasite is most active. The acarus itself lives in the deeper succulent layers of the rete, from which it derives its nourishment; and to attain this position it digs a long, narrow cuniculus or burrow, which passes obliquely downward through the upper epidermic layers, and is then extended onward through the rete parallel to the surface of the skin. It appears as a whitish or yellowish streak, from $\frac{1}{8}$ to 1 inch in length, and is further marked by a succession of minute black spots, the little heaps of excrement and ova that the female acarus leaves behind in its onward progress. A few papules, vesicles, or pustules may be present at the site of the burrows, but there are no other signs of the presence of the parasite.

Soon, however, another set of symptoms, of much greater extent and severity, make their appearance, due to the increasing irritation caused by the multiplying parasite and the action of the patient's finger-nails. They are those of a more or less general eczema and dermatitis, and are so various in form that the eruption of scabies is essentially a polymorphic one. Papules, vesicles, pustules, excoriations, blood- and pus-crusts, wheals, and hemorrhages are present in varying quantity; they are most marked at the places favored by the parasite, but may be present over the whole surface of the body. In neglected cases these secondary inflammatory lesions may entirely mask the original disease, as in the so-called Norway itch. The itching is enormously increased, and may interfere with sleep to such an extent as to impair the patient's health. Finally, in very old cases, the repeated hemorrhages into the cutis, caused by the action of the finger-nails, may lead to a permanent diffuse pigmentation of the skin similar to that seen in prurigo and phtheiriasis.

The portions of the body selected by the parasite for its habitat are characteristic. These are the soft skin of the interdigital clefts of the hands and feet, of the anterior surface of the wrists, of the penis and mammæ, together with the areas subjected to steady pressure, as by garters, corsets, etc. The face and head are not involved. Untreated, the malady lasts indefinitely,



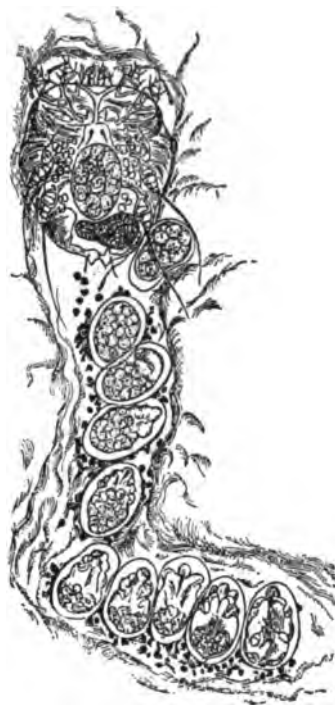
FIG. 57.—Scabies.
From photograph by the author.

Etiology.—Infection with the itch-insect occurs almost always from other persons affected with the disease, but varieties of the same parasite are found on animals also, and occasionally the malady is acquired from horses, dogs, and other animals. The transfer from one human subject to another always occurs at night, when the skin is warm and the parasite most active; there is no danger in the mere handling of affected individuals. Since the adult animals are rarely seen upon the surface, it is probably the larvæ that are most frequently transferred.

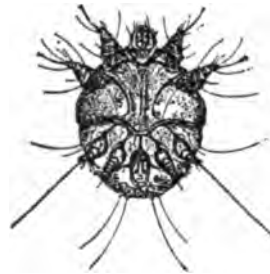
Pathology.—The *Acarus scabiei* belongs to the *Acarina*, and is an oval, crab-like organism with a straight intestinal canal, but no demonstrable vascular or respiratory apparatus. The female is yellowish white in color, $\frac{1}{8}$ of a line in length, and just visible to the naked eye. Its margin is serrated; its convex back is studded with spines, and shows the transverse striæ that mark the divisions of its chitinous envelop.

The head is armed with four strong claw-like mandibles and two palpæ. It has two anterior pairs of five-jointed legs armed with suckers and two similar posterior pairs provided with bristles. The oviducts and vagina open into the genito-urinary fold at the posterior end of the abdomen. The male acarus is one third smaller than the female, of similar structure, but has suckers on all its legs. The forked penis is placed in a horseshoe-shaped depression in the abdomen. It lives upon the surface of the skin or under the crusts and scales, and dies soon after impregnation of the female has occurred.

The female after fecundation cuts through the horny



Track of itch-insect.
After Neumann.



Male.



Female.

Acarus scabiei.
After Küchenmeister and Zürn.

FIG. 58.

epidermic cells with its sharp mandibles, and, elevating itself on its hind legs, burrows obliquely down into the skin toward the rete, and tunnels on along its upper surface. Thus the cuniculus is formed, along the course of which the parasite leaves behind it alternate ova and heaps of feces, the latter of which form the minute black

dots that mark the burrows. The ova are oval, $\frac{1}{12}$ of an inch in length, and from twenty to twenty-six are deposited by each acarus before its death, at the rate of about one daily. The larvæ develop in from three to six days, dig separate holes for themselves in the walls of the burrow, and in from two to three weeks appear on the surface as fully developed parasites.

The inflammatory reaction caused by these processes varies greatly in accordance with individual susceptibilities. Papules, vesicles, and pustules are present over the burrows; but when the skin is delicate and the itching more intense, all the polymorphous phenomena of eczema may be present, and affect extensive areas or the whole body. In bad cases the crusts and scales are full of acari, with their ova and remains.

Diagnosis.—The characteristic features of the disease are the burrows, the parasites, and their ova; the other lesions are those of the complicating eczema or dermatitis. The acarus is situated in the white non-inflammatory papule at the deeper extremity of the burrow. It may be obtained by opening the track with a fine needle and examining the fluid and detritus under the microscope in 10-per-cent. caustic potash solution; or the entire track can be snipped off with a pair of curved scissors, and similarly treated. The acarus itself, or its ova or feces, will certainly be found. The location of the eczema on the hands, more especially on the interdigital folds, on the penis, and around the genitals, etc., and the marked polymorphism, are also characteristic. Jessner has called attention to the fact that a black streak is left over the burrow if ink be brushed over the suspected surface and then wiped away.

The diagnosis from other itchy diseases requires to be carefully made. Phtheiriasis shows the characteristic excoriations and the nits, but no general dermatitis. Simple pruritis has no seat of election and shows no burrows. Prurigo begins in very early life, has the characteristic nodules, and is situated on the extensor surfaces. Eczema has not the typical location or the tracks. In urticaria the wheals and the reflex excitability of the skin should suffice to prevent error.

Prognosis is always good, and most cases can be speedily cured.

Treatment.—If the skin is much inflamed, a short preliminary treatment with one of the anti-eczematous applications is required; and of these Lassar's salicylic-acid paste (No. 2, p. 43) is the best. Then a vigorous use of green soap, either pure or in the form of the tincture (No. 5, p. 43), will prepare the skin for the parasiticide. Sulphur is the one most generally used, either as the simple ointment (Nos. 24, 25, p. 64) or in accordance with Wilkinson's formula (No. 38, p. 82). This must be rubbed in thoroughly over the entire affected surfaces of the body nightly for three or four days and allowed to remain until morning, when a hot water-and-soap bath should be taken. Naphthol is more agreeable for private practice, and is to be used in the same way. It may be employed as ointment or oil (No. 41, p. 100, No. 48, p. 105), but is especially efficacious in combination with green soap (No. 37, p. 82). The balsams of Peru or Tolu, either pure or diluted with oil, and more espe-

cially in combination with styrax (No. 57, p. 120), are preferred by Anderson on account of the absence of disagreeable odor and irritant effects. In the St. Louis Hospital at Paris, where very large numbers of these cases are treated, Hardy's modification of Helmerich's ointment (No. 58, p. 120) is uniformly employed. None other of the legion of antiscabitic applications need be mentioned here, since the above will suffice in all cases.

No. 57. Scabies Ointment.

R Bals. Peruv.
Styrac. aa. p. e.

No. 58. Hardy's Helmerich's Ointment.

R Potass. carb. 1 part
Sulphur sublim. 2 parts
Adipis 1½ "

PHTHEIRIASIS.

Synonyms.—Pediculosis.

Definition.—A contagious animal parasitic disease of the skin, characterized by the presence thereon of pediculi and their ova, together with a secondary eczema and dermatitis.

Three varieties of the hemipterous family *Pediculidæ* or lice are parasitic on the human body. They are wingless, non-metamorphosing insects that live on the blood and the secretions of the body, which they obtain by suction. They are the so-called head-lice, body-lice, and crab-lice; and they differ sufficiently in appearance, habits, and effects to require separate description.

PHTHEIRIASIS CAPITIS.

Synonyms.—Pediculosis capitis.

Definition.—Pediculosis of the head, characterized by the appearance on the scalp and the hair of the *Pediculus capitis* and its ova, together with a secondary eczema and dermatitis.

Symptoms and Course.—The first symptom of pediculosis of the head is the itching caused by the motion of the parasite and the suction by which it obtains its nourishment. This leads to scratching, excoriations, and eczematous and follicular inflammations, until finally more or less extensive areas of the scalp are raw and weeping, or covered with impetiginous crusts that mat the hair together. Washing the scalp and combing the hair become so painful that they are omitted, and the parasite flourishes in the foul-smelling, decomposing mass. The eczema may spread on to the face and neck, and the neighboring lymphatic glands become swollen and tender. The so-called plica polonica, where the hair remains for years matted together and swarming with vermin, is simply an exaggerated condition of phtheiriasis capitis. The malady is commonest among children on account of the greater chances of contagion in schools, and among the poorer classes on account of their uncleanness; but it occurs also in adults and among the well-to-do.

Etiology.—The parasite is always directly transferred. Sleeping together and the interchange of hats are the commonest methods of contagion.

Pathology.—The *Pediculus capitis* is a small oval insect, 2–3 mm. long, with a segmented abdomen containing the genital organs, a broad thorax, from which project six hairy legs ending in strong hooked claws, and a triangular head provided with a pair of antennæ, a suction-tube, and two prominent black eyes. The female is somewhat larger than the male, and lays from fifty to sixty eggs, which take from five to six days to hatch; and in twenty days more the young are sexually mature. The rate of increase of the parasite is therefore extremely rapid, and it has been calculated that a single female will have five thousand descendants in eight weeks. The males are less numerous than the females, and are provided with a wedge-shaped penis on the upper surface of the last abdominal segment. The color of the pediculi varies with that of the skin, being white in the Eskimo, gray in the European, yellowish brown in the Chinese and Japanese, and black in the negro.

The ovum is deposited in a bag known as the “nit,” which is a pear-shaped chitinous envelop surrounding the hair and fastened to it by a sort of ferrule. Its broader end is directed toward the scalp, and is closed by a round operculum or lid, through which the embryo escapes. The empty nit remains; and since the pediculus always affixes it to the portion of the hair close to the scalp, successive bags are attached as the hair grows, and their number on a single shaft, which may reach fifteen or twenty, will enable an estimate to be made of the length of time that the disease has existed. The secondary eczemas and dermatites, caused by the irritation of the parasite and infection by the finger-nails, do not differ from the ordinary forms of these affections. The adenopathy is caused by absorption.



FIG. 59.—*Pediculus capitis*.
Photomicrograph by the author.

Diagnosis.—The presence of the pediculi and their nits will distinguish phtheiriiasis from eczema capitis, the only disease with which it is liable to be confounded. Eczema of the nape of the neck and the back of the head is almost always due to pediculosis, even in cases where the parasite is no longer present.

Prognosis is of course good if the cause is recognized and the patient appropriately treated.

No. 59. Kerosene Lotion.

| | | | | | |
|--------------|---|---|---|---|----------|
| R̄ Petrolii | . | . | . | . | 60 parts |
| Ol. olivæ | . | . | . | . | 30 " |
| Bals. Peruv. | . | . | . | . | 10 " |

Treatment.—Cutting the hair is not necessary, though it facilitates treatment and removes large numbers of nits. The carbolic or sublimate spirit (No. 34, p. 78, No. 49, p. 108) can then be used daily, together with plenty of hot water and soap and

the fine-tooth comb. In dispensary practice kerosene, either alone or with olive-oil and balsam of Peru (No. 59, p. 121), is the readiest and best application. It should be rubbed thoroughly into the hair in the evening (care being taken to avoid accidental ignition), the head closely bound up until morning, and then thoroughly washed. This, repeated three or four nights in succession, will destroy the parasites and embryos; but the nits are more resistant, and require the free use of alcohol or

vinegar and the comb for their removal. The eczema and dermatitis sometimes require treatment, though the removal of their cause will generally suffice. The ointment of ammoniated mercury fulfils this indication, and is a parasiticide also; it is therefore to be preferred in private practice. The same may be said of the 5-per-cent. naphtholated oil (No. 41, p. 100).



FIG. 60.—Phtheiriasis vestimentum.
After Van Haren-Noman.

PHTHEIRIASIS VESTIMENTI

Synonyms.—Pediculosis vestimenti s. corporis.

Definition.—Pediculosis of the body, characterized by the presence of the *Pediculus corporis* and its ova in the clothing, by the lesions caused by it upon the skin, and by a secondary eczema and dermatitis.

Symptoms and Course.—

When the pediculus withdraws its haustellum from a glandular orifice a small hemorrhage occurs in the follicle,

with an area of œdema around it, appearing as a minute red dot surrounded by a wheal. Itching and burning are felt, which the patient relieves by scratching. When the top of the œdematous papules is torn off, and bleeding relieves the congested vessels, the itching ceases. The original lesions are transitory and unimportant;

but the scratch lesions are much more permanent, appearing as characteristic linear, parallel, hemorrhagic streaks or rows of torn papules. They are located more especially on the neck and waist, where the folds of the clothing fit tightest, and where the parasite finds a home in the seams. In bad cases infection from the finger-nails gives rise to furuncles, abscesses, and deeper ulcerations, ending in superficial scars. When the malady has been present for many years, as is frequently the case with tramps and lodging-house dwellers, the multitudinous hemorrhages occasion a general diffuse pigmentation of the skin which is characteristic.

Etiology.—Body-lice are transferred from one person to another by contact with infected bed-linen, clothing, furniture, etc. While most frequently seen in persons of dirty habits, any one may acquire them in street-cars and other public places.

Pathology.—The *Pediculus corporis* is a grayish-yellow oval insect, similar in form and structure to the head-louse, but somewhat larger, measuring 2–3 mm. Its habitat is the seams and folds of the clothing next to the skin, and it seeks the integument only for the purpose of feeding. It obtains its nourishment by suction after thrusting its haustellum into a follicle-mouth. Its color when swollen with blood is red. The nits are small, yellowish, rounded bodies, and are laid in the seams or in the meshes of coarse underwear. The number of the embryos and the time required for their hatching and maturity are about the same as with the *Pediculus capitis*.



FIG. 61.—*Pediculus vestimenti*.
After Küchenmeister and Zürn.

Diagnosis.—The location of the secondary lesions on the neck, waist, buttocks, thighs, etc., the parallel scratch-marks, the minute hemorrhagic papules, the pigmentation, and the finding of the parasite and its nits in the clothing will distinguish phtheiiasis corporis from the other itchy diseases. General pruritus is rare, and the partial form is usually localized around the orifices of the body. Urticaria has its wheals, which appear anywhere, and an irritable skin, and is associated with digestive disturbances. Scabies has the characteristic tracks and the equally characteristic location around the genitals and in the interdigital folds. Prurigo begins in youth and affects the extensor surfaces chiefly. Eczema is more frankly inflammatory, with weeping surfaces and crusts at its favorite seats.

Prognosis.—This is good if the nits and embryos can be destroyed. This is not always possible, and some of these patients go on for years affected with the disease, sharing the supposition, so common in the lower classes, that the skin breeds the vermin.

Treatment.—Disinfection of the clothes is the only treatment. Underwear can be boiled, but the outer clothing must be exposed to a dry heat of at least 160° to 175°, by wrapping it up in paper and placing it in a carefully heated oven. The skin need not be treated, though the staphisagria ointment recommended by

Duhring (No. 60, p. 124) will destroy any parasites or embryos that may be on it. The excoriations may require a bland ointment or dusting powder (No. 18, p. 61, No. 26, p. 70, No. 54, p. 113).

No. 60. Duhring's Staphisagria Ointment.

| | |
|-----------------------------|---------|
| R̄ Pulv. staphisagriæ . . . | 1 part |
| Ungt. simplicis . . . | 4 parts |

PHTHEIRIASIS PUBIS.

Synonyms.—Phtheiriasis inguinalis, pediculosis pubis, crabs.

Definition.—Pediculosis of the genital regions, and sometimes of all the other hairy surfaces except the scalp, characterized by the presence of the *Pediculus pubis* and its ova, together with a secondary eczema and dermatitis.

Symptoms and Course.—The crab-louse is found most commonly in the pubic region, but sometimes seen in the axillæ, in the beard, mustache, eyebrows, and lashes. In very hairy individuals the entire body, save the head, hands, and feet, may be affected. The symptoms caused by its presence consist of the itching, together with the secondary excoriations and eczemas, as is the case with the other pediculi. The parasites are small and transparent, and therefore sometimes hard to detect; but they can be seen lying along the hairs, which they clutch with their strong claws, while their heads remain buried in the follicle-mouths. Minute heaps of reddish excrement are visible on the skin among the hair-shafts. Considerable traction with the forceps is required to detach them. The nits are smaller than those of the other varieties, but of similar structure, and attached to the hairs in the same way.



FIG. 62.—*Pediculus pubis*.
Photomicrograph by the author.

Etiology.—Contagion almost always occurs during sexual intercourse. It may, however, happen without it, as was shown to my satisfaction quite recently, when almost all

the tenants and employees on one floor of a very large office building in New York became infected, and the parasites were found on the woodwork of the public water-closets.

Pathology.—The pubic is the smallest of the three varieties of pediculi, and is



FIG. 63.—Nit and embryo—*Pediculus pubis*.
Photomicrograph by the author.



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PHOTOGRAVURE & COLOR CO., N. Y.

ECZEMA IMPETIGINOSUM.

PLATE XV.

a crab-like insect 1–2 mm. in length. Its flat body is short and round, and the thorax and abdomen are merged into one. Its color is a transparent grayish yellow. It obtains its nourishment by means of an haustellum, as do the other lice.

Diagnosis.—The itching in the genital region is sufficiently characteristic, and a close inspection in a good light will always reveal the presence of the parasite. In the better class of patients a sort of “pediculiphobia” is sometimes left behind, and they will often complain of itching, and claim to be still infected, long after all the vermin have been destroyed.

Treatment.—Almost any of the parasiticides previously recommended will be found efficacious. The sublimate spirit (No. 49, p. 108) does very well, but it is liable to irritate the skin of the scrotum and the thighs, and cannot be used over the whole body for fear of absorption. Mercurial ointment, the common remedy for the condition, has similar limitations. In extensive cases the naphtholated oil (No. 41, p. 100) or the carbolic lotion (No. 11, p. 56) or the ointment of ammoniated mercury may be used; they are slower, but safe and effective. Rosenbach recommends a mixture of balsam of Peru and ether (No. 61, p. 125).

No. 61. Rosenbach's Lotion for Pediculosis.

| | |
|-------------------------|----------|
| R̄ Bals. Peruv. | 30 parts |
| Ether. sulph. | 100 “ |

ECZEMA.

Synonyms.—Salt rheum, tetter, *Salzfluss* (Ger.).

Definition.—A catarrhal inflammation of the skin, characterized by the appearance of erythematous areas, papules, vesicles, pustules, or weeping or scaling surfaces, and accompanied by itching.

Symptoms and Course.—Eczema is the commonest of all the diseases of the skin, forming about one fourth of all cases. It is essentially a simple catarrhal inflammation, and its symptoms in general are the classical ones of heat, redness, pain, and swelling. They are modified, however, by the fact that the skin is exposed to the action of the external influences, and is not confined in the midst of other organs and tissues. These factors diminish the heat and redness; cause pain to be replaced most often by itching, though occasionally by burning; permit the exudation and emigration incidental to the inflammatory process to flow off from the surface of the affected tissue; and render the affected organ liable to external injuries and microbic infection. As with other inflammations, the process terminates either in resolution, with absorption or extrusion of the effused products, or in organization, or, finally, in pus formation. The disease may be a transitory one, lasting only for a few days; or it may endure, with exacerbations and remissions, for a lifetime. Save in very extensive and unusual cases there is no accompanying constitutional disturbance.

The symptomatology of eczema is essentially protean; it may appear as an erythematous patch, as a moist and oozing surface, as a collection of vesicles, papules, or pustules, or as a crusted and desquamating area. These differences depend upon the cause of the affection, the stage that it is in, and the conditions and surroundings of the affected skin. Several varieties of lesion are often present together, and, in accordance with the predominant one, various kinds or, more properly, various

stages of eczema are recognized. The course, location, and etiology of the disease give rise to still other varieties that require consideration.

1. Eczema erythematosum. The process commences with the appearance of one or a number of slightly elevated, pinkish, itchy macules, of indefinite outline, which soon spread and coalesce into larger reddened areas. The entire surface is swollen; its color varies from a light pink to a dusky red; there is moderate heat and a varying amount of itching. It is seen most commonly upon the face, where



FIG. 64.—Eczema papulosum.
From photograph by the author.

it appears as a general diffuse redness, with accentuation of the natural folds and wrinkles of the skin; but it may affect the palms, the soles, and the regions around the genitals. The process may last only a short time, but it is frequently very chronic, especially in the old. Mental excitement, external heat, a heavy meal, or the use of alcohol aggravates it temporarily. It usually terminates in resolution; the redness and swelling fade, the itching ceases, and the process ends with a fine epithelial

desquamation; but it may develop into one of the other forms of eczema. When it has been long present, a permanent thickening of the skin, due to an inflammatory new growth of connective tissue, is left behind.

2. *Eczema papulosum*. This is a common and very obstinate form of eczema, and is usually seen on the trunk and the extensor surfaces of the limbs, but rarely affecting the head or face. The eruption consists of millet-sized, acuminate, inflammatory papules, isolated or grouped, and often spread over a considerable area of the body. Their color is reddish or violaceous. They may remain papules during the entire course of the disease, they may become confluent in places and form larger, irregular patches, or they may go on to form vesicles and weeping surfaces. The itching is intense, and excoriations and blood-crusts are common.

3. *Eczema vesiculosum*. This begins with a diffuse or punctate redness, accompanied by itching and burning, and papules soon appear that rapidly become vesicles. They are pin-point sized, acuminate, irregularly arranged, filled with a clear serum,



FIG. 65.—*Eczema vesiculosum*.
After Van Haren-Noman.

and surrounded by a narrow inflammatory areola. Occasionally they are grouped, and sometimes they become confluent and form irregular masses. The vesicles grow slowly until they finally rupture, either spontaneously or in consequence of the scratching. A red, weeping surface is left behind, the secretion of which dries up into thin, yellow, honey-like crusts, or flows off in drops. As the inflammation subsides the serous discharge lessens, the redness fades, the crusts fall off, and, with slight desquamation, a new epithelial covering is formed. *Eczema vesiculosum* occurs with especial frequency on the faces of children. It may last for some time unchanged, but more commonly it runs into the form known as *eczema rubrum* or *eczema madidans*.

4. Eczema pustulosum or eczema impetiginosum is the variety in which the lesions either originate as pustules or rapidly become such after a vesicular stage. A secondary infection with pus-cocci probably occurs. At first minute, the pustules rapidly become larger and then rupture, and their contents dry up into dark, blackish or greenish or yellowish crusts. It occurs most frequently on the scalp and face of children and in debilitated patients. After persisting for an indefinite time, it gradually disappears in the same way as does the vesicular form.



FIG. 66.—Eczema squamosum.
From photograph by the author.

While each one of these four chief types of eczema may occur alone and persist unchanged, it is more common to find them intermingled. They are, in fact, rather to be considered as different stages of the same process; and an eczema may, and often does, pass through all of them before the inflammation subsides. A number of other terms are employed to describe varieties of this protean malady, and of these the following forms are characteristic and important enough to merit especial mention.

5. Eczema acutum. This may be of the erythematous, vesicular, papular, or pustular form, and usually passes through all four stages. The reddened and swollen skin soon becomes covered with papules, vesicles, and pustules; these latter rupture, leaving a red and oozing surface behind. After a few days or weeks the secretion diminishes, the redness disappears, and the process ends with desquamation. It may also terminate in chronic eczema. The itching and burning are intense, and there



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ECZEMA ACUTUM
PLATE XIII

may be much œdema in locations, as on the eyelids, where the subcutaneous connective tissue is loose. The extensive general forms of acute eczema are rare, and may be accompanied by a febrile movement. It is very liable to relapse at irregular intervals.

6. *Eczema chronicum*. This may appear as any one of the chief varieties, but is usually squamous in form, and follows an acute attack. The long-standing chronic inflammation leads to hypertrophic thickening, fissuring, and pigmentation of the affected parts. It is usually due to some permanent cause, most frequently the patient's occupation. It often persists for years.

7. *Eczema squamosum* represents the final stage of any of the other forms of the disease; but extremely chronic cases may be squamous almost from the beginning. The amount of exudation is small; the skin is reddened in patches or more diffusely, and is covered with fine, grayish-white scales.

8. *Eczema crustosum* is simply one of the other forms in which the serum has dried up into crusts, whose color depends on the nature of the secretion and the varying amounts of serum, pus, sebum, blood, and dirt that are intermingled. Under these crusts we find a diffusely reddened, weeping surface.

9. *Eczema verrucosum* occurs more especially on the lower extremities in the aged, when the long-continued chronic inflammation leads to hypertrophy and thickening of the skin. The entire surface is dry and warty and covered with thin crusts and scales.

10. *Eczema rubrum* or *eczema madidans* is usually a consequence or continuance of *eczema vesiculosum*. The affected surface is red and moist; and a thick, gummy serum exudes from it, which may either flow away or dry up into yellowish- or greenish-brown crusts. It is oftenest seen on the lower extremities of elderly people, and may be very extensive, involving the whole limb. It is very chronic, often lasting for years.

11. *Eczema intertrigo*. This is seen where the surfaces of the skin are in apposition, and where maceration of the parts with sweat and serum occurs. It appears as a diffuse, red, weeping surface, and is commonest at the flexures of the joints, on the nates and genitals (especially in children), and around the neck.

12. *Eczema capitis*. This may occur in isolated patches, or be generally diffused over the head. The sticky serum mats the hair together, and pediculi, which are the cause of the inflammation, are almost always present. In the more chronic forms the whole scalp is scaly, forming what is known as *pityriasis of the head*.

13. *Eczema faciei*. This is usually primary and acute, and is very common in infants, forming the *crusta lactea*. It is generally at first vesicular and then diffuse,



FIG. 67.—*Eczema faciei*.
From photograph by the author.

and is accompanied by much oozing. The more chronic forms in adults are often erythematous; the skin is red and swollen, the natural wrinkles are exaggerated, the lids are swollen, and the itching and burning are intense.

14. Eczema barbæ is one of the varieties of the so-called barber's itch. The bearded skin is red, swollen, and tender, and the hairs are matted together with gummy secretion. Secondary coccigenic infection, leading to the formation of pustules around the hair-follicles, is common.



FIG. 68.—Eczema of the hands.
From photograph by the author.

15. Eczema manuum. This is a very common affection, and while it may be acutely vesicular or pustular, it usually assumes the chronic indurated form. When the palms are affected the skin is thickened and fissured at the flexures and folds. It is commonly due to the patient's occupation, and is found in masons, gilders, polishers, etc., being caused by the irritating materials that they use.

16. Eczema genitalium is usually of the chronic erythematous or squamous form, and most commonly affects the scrotum. The itching is frequently intense, and the malady is very rebellious to treatment.



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ECZEMA SEBORRHEICUM.

PLATE LI.

17. *Eczema unguium*. This occasionally occurs in connection with other eczematous eruptions. The nails become brittle and break, are furrowed with dark lines, and finally fall off.

18. *Eczema seborrheicum*. This is a form that Unna first called attention to, and which certainly differs very markedly from all the ordinary types of eczema. It appears as rounded or circinate yellowish-red patches, spreading peripherically, with a papular or scaly margin and a fading center. Its favorite location is the sternum and the center of the back, the scalp, eyebrows, and mustache, the axillæ, and the genitocrural fold. On the scalp it appears as a diffuse or general redness, with minute oily scales, and a very distinct reddish border along the forehead and temples, the *corona seborrheicum*. It is really a combination of seborrhea in either its dry or oily form with an eczematous inflammation. It is undoubtedly of parasitic origin, and belongs in the section with ringworm and similar affections rather than in that of the simple inflammations.

Etiology.—Eczema occurs at all ages and in all conditions of life. Its frequency during infancy is to be ascribed to the delicacy of the skin at that age and its prompt reaction to irritants of external and internal origin. The causes of eczema are very numerous, and are either internal and general, or external and local.

The internal causes of eczema are, of course, more or less indefinite and incapable of exact proof. Nevertheless the malady does occur with especial frequency in connection with nervous diseases, in anemia, chlorosis and leucocythemia, in rickety individuals, in gravid women, in those affected with asthma, and together with digestive disturbances and obstinate constipation.

The local causes of eczema are too many to be enumerated in detail. They consist of : (a) Parasites.

While the claim advanced by Unna to have found a bacterial cause for the various eczemas is by no means substantiated, some of these maladies are undoubtedly of



FIG. 69.—Eczema acutum.
From photograph by the author.

that nature. This is notably the case with eczema seborrheicum. I believe that only the eczemas that have a marked seborrheal element, or that appear with sharply circumscribed circular or gyrate outlines, can in the present state of our knowledge be positively claimed as parasitic. The animal parasites, pediculi and the itch-insect, cause a secondary eczema of the skin, and the same is true of the trichophyton. (b) Mechanical, chemical, and thermic irritants. Many substances, such as mercury, iodoform, creolin, carbolic acid, petroleum, turpentine, sulphur, and the aniline dyes cause an eczematous inflammation of the parts exposed to their influence; so also do the poisons of the *Rhus toxicodendron* and *Rhus venenata*. The ultra-violet chemical rays of sunlight cause eczema solare, and the electric-light rays have a similar effect. Strong acids and alkalis are efficient causes; so also are many soaps; and even water, when used to excess, can set up an eczematous inflammation. Finally, the finger-nails are responsible for many eczemas, more especially in the itchy eruptions, pruritus, prurigo, scabies, etc.

Pathology.—Eczema is a simple catarrhal inflammation of the skin, and does not differ essentially from similar inflammations of the mucosæ. The ordinary vascular phenomena of inflammation and their consequences are present; but the process varies somewhat in accordance with the intensity and the duration of the inflammation. The fluid that is poured out is the blood-serum, a yellow, clear, sticky, syrupy material, drying up into yellowish crusts. In the erythematous form the exudation is moderate and there is increased activity of the epidermic cells, as is shown by the desquamation. In the papular form the papillary vessels are chiefly affected, and the exudation and emigration are great enough to elevate the corneous layer. The vesicular form is simply an exaggeration of the papular; the exudation is sufficient to accumulate as a fluid mass in the corium. In the pustular form there is increased cell-emigration and multiplication of the connective-tissue corpuscles. The changes of chronic eczema are more deeply seated in the corium and subcutis. The parts are thickened by the infiltration and new connective-tissue formation, and pigment is deposited in the deeper layers of the rete and corium. The verrucous form is marked chiefly by the permanent enlargement of the papillæ. In the squamous form the epithelial-cell proliferation is increased.

Diagnosis.—Eczema is the most frequent and important disease of the skin, and its diagnosis is often difficult on account of the polymorphous nature of its manifestations, and from the fact that in various other maladies the secondary lesions are eczematous in character and may mask the original disease. Where one of the chief typical forms is present the diagnosis will present no difficulties; but the mixed forms may resemble a number of other affections. In a general way the diagnosis is made from the inflammatory symptoms and the formation of acuminate papules and vesicles, exudation, crusting and scaling and thickening, together with the absence of sharp limitation of the eruption, the polymorphism, and the intense itching. The principal maladies which require differentiation from it are:



ECZEMA PALMÆ.



TYPOGRAVURE.

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SYPHILODERMA PALMÆ.

PLATE XVI.

(*a*) Erysipelas, which has marked and acute general febrile symptoms, with a vivid, smooth, shining redness, swelling, sharp borders, and is never weeping or papular or vesicular. (*b*) Psoriasis, which has shining silvery scales on a punctate bleeding base, is sharply circumscribed, never shows vesiculation or oozing, and is situated most often on the extensor surfaces of the limbs. (*c*) Herpes facialis, which may be distinguished by the presence of a sharply limited group of vesicles of the same age situated on an inflamed base. (*d*) Eczema marginatum has a sharply limited brownish-red margin of curved outline, and is situated in the axilla and the genito-crural fold. (*e*) Lupus erythematosus. This sometimes resembles an eczema very closely, but differs from it in its very slow progress, the absence of vesiculation and itching, and the presence of scanty seborrheal scales with plugs from the glandular orifices projecting from their under surfaces, and is followed by superficial central scarring. (*f*) Pemphigus, which has large blebs separated from one another by sound skin. (*g*) Phtheiriasis vestimenti. This often causes lesions that are essentially those of a papular eczema; but the discovery of the cause in the clothing will serve to prevent error. (*h*) Scabies. Here also the lesions are eczematous; but the tracks, the history of contagion, the seat at the clefts of the fingers and on the genitals, should suffice to prevent mistake. (*i*) Syphilis. The papules of syphilis are hard, copper-colored, do not disappear on pressure, and are unaccompanied by itching. The ulcers of syphilis have hard, infiltrated edges and dirty necrotic bases, while ulceration does not occur in eczema. The diagnosis between syphilis and eczema of the palms is often a matter of difficulty; but the sharply limited dark-brown infiltration, with semi-detached scales at the margins, the central clearing, and the presence of other manifestations of the disease are characteristic. (*j*) Impetigo contagiosa has isolated yellow circular crusts on reddened bases, and usually a history of contagion. (*k*) Lichen planus. Here the papules are flat-topped, angular, often umbilicated, and violaceous in color; they are grouped and symmetrical, and affect the backs of the hands and the forearms by preference. (*l*) Seborrhea is never moist, and shows the characteristic fatty scales. (*m*) Trichophytosis may resemble a papulo-erythematous eczema very closely; but the patches are distinctly circular or gyrate, their margins are abrupt, and the microscope will always settle the diagnosis. (*n*) Dermatitis, as from external irritants, while it may resemble an eczema very closely, has a history and course that are characteristic, and rapidly subsides when its cause is removed.

Prognosis.—This in a general way is good, though there are exceptions. Acute eczema is always curable, but is very liable to relapse. Chronic eczema may be incurable when its underlying cause cannot be removed. In those rare cases in which the entire integument is involved the affection is a grave one; the important functions of the skin are interfered with, and the excessive discharge causes exhaustion, which is increased by the loss of rest due to the itching. The chronic eczemas of the aged may be incurable, though they can always be relieved. Ec-

zema leaves no permanent mark on the skin; it never causes ulceration or the formation of cicatricial tissue, and the thickening and pigmentation that sometimes result from it disappear in the course of time.

Treatment.—A methodical and careful treatment, which takes into account the underlying and accompanying general conditions as well as the nature and stage of the local malady, will give the best results. The topical treatment is undoubtedly the most important, but the other means must not be neglected.

No. 62. Diuretic Mixture.

| | | | | | | |
|---|-------------------|---|---|---|---|---------|
| R | Kali acetat. | . | . | . | . | 1 part |
| | Spts. æther. nit. | . | . | . | . | 2 parts |
| | Syrp. aurant. | . | . | . | . | 4 " |
| | Aq. fœnic. | . | . | . | . | 12 " |

GENERAL TREATMENT.—This consists in the appropriate management of any abnormal condition of the general system or of other organs which may influence the origin or persistence of the eczematous malady. Anemic and chlorotic patients require phosphorus, quinine, iron, strychnine, and the mineral acids, with carefully prescribed diet and exercise. Startin's mixture (No. 19, p. 64) is very useful here. Where rheumatic or gouty symptoms are present the alkalis, more especially the alkaline diuretics (No. 62, p. 134), either alone or with colchicum, are required. They are also useful where there is functional kidney derangement. When dyspepsia and constipation are present the diet must be carefully regulated, more especially as regards meats; and laxatives, such as cascara and the various mineral waters, must be regularly used. It is sometimes necessary to put the patient on a milk diet for a time. In fact, the care of the digestive tract is of the utmost importance in eczema; and, in the infantile forms more especially, little permanent good will be ac-



FIG. 70.—Eczema crustosum.
From photograph by the author.

complished unless the diet and the bowels be most carefully regulated. In the impetiginous eczemas, and in general in all the so-called strumous cases, where the tendency to chronic inflammation is marked, cod-liver oil in full doses, perhaps combined with the syrup of the iodide of iron, is most useful.

Of the internal remedies directed to the eczema itself we need mention only two, arsenic and ichthyol. The former may be given as the Asiatic pill (No. 6, p. 46) or as Fowler's solution in doses of 3 to 15 drops three times daily, well diluted with water and administered after meals. It is useful only in the chronic squamous cases when the digestive tract is in good condition, and it must be pushed up to the point of toleration. Ichthyol may be given in pill form, preferably combined with arsenic (No. 63, p. 135).

No. 63. Ichthyol-Arsenic Pills.

℞ Ammon. sulph-ichthyolat. 3i ss
 Ac. arseniosi . . . gr. 2
 Pulv. glycyrrhizæ . . . q. s. ut f. pil. No. 90
 Sig. 2 to 3 t. d. after meals.

LOCAL TREATMENT.—An indispensable preliminary step is to remove all irritation from the inflamed surface. Perhaps the commonest source of this is water, and in the acuter cases its use must be restricted or even forbidden altogether. Warm olive-oil may be employed for cleansing. Other irritants are the atmosphere, soaps, decomposing secretions, the finger-nails, and mechanical or chemical influences. The crusts and scales must be removed after a thorough soaking with olive-oil, and for this purpose a single application of the tincture of green soap (No. 5, p. 43) and water is admissible. The further local treatment will depend on the nature and stage of the eczematous process.

No. 64. Zinc-Camphor Powder.

℞ Pulv. camph. 1 part
 Pulv. zinci ox. 3 parts
 Pulv. amyli 12 "

No. 65. Zinc-oil.

℞ Pulv. zinci ox. 30 parts
 Ol. olivæ 25 "

No. 66. Lime-oil.

℞ Ol. amygdal.
 Aq. calcis aa. p. e.

No. 67. Alkaline Lotion.

℞ Sod. bicarb. 1 part
 Aquæ 50 parts

No. 68. Cooling Salve.

℞ Adip. lanæ 1 part
 Adip. suillis 2 parts
 Aq. rosæ (s. calcis) . . . 3 to 5 "

No. 69. Rose-water Ointment.

℞ Aq. rosæ 3 parts
 Adip. lanæ 3 "
 Adip. suillis 2 "

Acute eczema. Remedies of the mildest kind are here required, and lotions and powders are more generally applicable than salves and pastes. In the erythematous and acute vesicular forms the zinc-oxide powder (No. 18, p. 61), either alone or with camphor (No. 64, p. 135), may be employed; or the zinc- or lime-oils (Nos. 65, 66, p. 135), followed by a dusting powder. Weak alkaline lotions are often useful in the early stages (No. 67, p. 135). In the less acute degrees the various cooling salves, of which No. 68 (p. 135) is an example, may be used, as may also the boracic-acid ointment (No. 29, p. 74) or the rose-water ointment (No. 69, p. 135). The use of powders after these various applications must be persisted in as long as there is much secretion. The salves and plaster-mulls can often be employed with advantage.

For the relief of the itching, which is especially intense in the papular form of the disease, the 5-per-cent. menthol spirit (No. 33, p. 78) or the 3-per-cent. carbolic spirit (No. 34, p. 78) may be employed. As the inflammation subsides, painting the parts once daily with the tar tincture (No. 45, p. 104), followed by the salicylic-menthol paste (No. 70, p. 136), will be found useful.

No. 70. Salicylic-Menthol Paste.

℞ Ac. salicyl. 1 part
Menthol 1 to 2 parts
Pulv. zinc ox.
Pulv. amyli
Adip. lanæ
Petrolati aa. 10 "

No. 71. Diachylon Ointment.

℞ Emplast. diachyli 3 parts
Aq. rosæ
Adip. lanæ
Adip. suillis aa. 1 part

Chronic eczema. Acute exacerbations or acutely inflamed portions of a chronic eczema must be treated with powders and pastes, as above directed. For the more usual forms the diachylon ointment (No. 71, p. 136) or Lassar's paste (No. 2, p. 43) is appropriate. The mode of their employment is by no means unimportant. They should not be rubbed into the affected part or applied with the finger, but should be spread about as thick as the back of a table-knife on narrow pieces of linen or bandage, and fastened to the affected part in overlapping strips. The tar preparations are perhaps our most valuable remedies in the squamous stage, but they should never be used so long as there is much secretion. We may employ the tar spirit (No. 10, p. 56) or the ointment (No. 22, p. 64), gradually increasing the proportion of tar as the process requires it. In some cases we must use the ol. cadini or rusci pure, with the addition of 10 per cent. of ether. The tar plaster-mulls are elegant and efficacious applications. Ichthyol acts like tar and may be similarly employed (No. 72, p. 137). In chronic seborrheal eczema, so frequent upon the head, sternum, and back, the sulphur paste (No. 24, p. 64) or the sulphur and the resorcin ointments (Nos. 20, 25, p. 64) are of use.

In the chronic indurated eczemas the 10- to 40-per-cent. salicylic plaster is effective, as is also the free use of tar soap. Where the thickening is very marked, daily friction of green soap, followed by one of the above-mentioned salves, is indicated. In eczemas of parasitic origin 5- to 10-per-cent. chrysarobin and pyrogallol ointments are very serviceable. Whatever application we employ in chronic eczema we must be careful to avoid too much irritation, lest we make an acute inflammation of a chronic one. This applies especially to tar and similar preparations.

No. 72. Ichthyol Ointment.

℞ Ammon. sulph-ichthyolat.
 Aq. dest. āā. 5 parts
 Adip. benzoat. 15 "
 Adip. lanæ 25 "

No. 73. Calamine Lotion.

℞ Pulv. calamini 2 parts
 Pulv. zinci ox. 2 "
 Glycerini 1 part
 Aq. rosæ 30 parts

There remains to be mentioned the most appropriate treatment for some of the commoner varieties of the disease. In eczema capitis we must first remove the pediculi and their nits. This may be effected by soaking the head with kerosene at night, and washing it with soap and hot water in the morning, or by the use of the sublimate spirit (No. 49, p. 108). It is rarely necessary to cut the hair. The crusts must be softened and carefully removed by means of compresses soaked in olive- or cod-liver oil, followed by washings with ordinary or green soap. The lime-oil (No. 66, p. 135) or the boracic-acid salve (No. 29, p. 74) can then be employed.

Eczema faciei. The zinc salve or plaster-mulls cut into strips and accurately fitted to the face are very excellent. In the acute erythematous form the calamine lotion (No. 73, p. 137) will be found effective, as will also the cooling and rose-water salves (Nos. 68, 69, p. 135). The more chronic cases require the sulphur and tannin pastes (No. 20, p. 64, No. 50, p. 108). I have found a 2-per-cent. ichthyol salve very useful in the acute facial eczemas of children. Fissures of the lips may be touched with the nitrate-of-silver stick, and if there are any discharges from the nasal or aural cavities the affected mucosæ must be appropriately treated. For eczema of the eyelids the white precipitate ointment will be most appropriate. In children a mask must be worn, more especially at night, to prevent irritation and infection from the finger-nails.

Eczema manuum. This is frequently a most difficult affection to cure, more especially when it is dependent on the patient's occupation, as is the case with washerwomen, bakers, plasterers, etc. In so far as it is possible these sources of irritation must be removed, and in some cases rubber gloves can be worn while at work. The balsam-of-Peru ointment (No. 74, p. 138) or a tar paste (No. 75, p. 138) is a useful local application. Very chronic cases may require to be painted with the pure tar spirit (No. 10, p. 56) or pure tar. Eczema of the palms is a very frequent affection, the parts being hard, thickened, and fissured at the folds of the

skin. Here the thickened epidermis must be removed by friction with pumice-stone or by means of the salicylic plaster recommended by Unna, after which the ointment of ammoniated mercury or a tar preparation may be used.

No. 74. *Peru-Balsam Ointment.*

| | |
|----------------------|--------------|
| ℞ Bals. Peruv. . . . | 10 parts |
| Ac. salicyl. . . . | 1 part |
| Petrolati | |
| Adip. lanæ | |
| Pulv. zinci ox. } | āā. 10 parts |
| Pulv. amyli } | |

No. 75. *Tar Paste.*

| | |
|--------------------|----------------|
| ℞ Ol. cadini . . . | 10 to 15 parts |
| Pulv. zinci ox. | |
| Pulv. amyli . . . | āā. 20 " |
| Petrolati . . . | ad. 100 " |

Eczema cruris. Here the best method is to use some mildly stimulating application, such as Lassar's paste (No. 2, p. 43), after thoroughly disinfecting the surface. The acuter cases can be treated with the various dusting powders (No. 18, p. 61, No. 64, p. 135) or powdered boracic acid. If varicosities exist, as is usually the case, a properly applied bandage must be worn continuously. In the chronic scaly cases support and protection of the surface with the glyco-gelatin application (No. 4, p. 43) is very useful. It must be melted in a water bath, and applied freely with a brush to the part after careful cleansing and disinfection; bandages are applied before it has set; and the dressing may remain *in situ* for from three to seven days.

Eczema genitalium is often a very chronic and intractable affection. The parts must be supported and kept apart by means of pads of borated cotton, suspensories, and T-bandages. In the most acute cases the calamine lotion (No. 73, p. 137) or the boracic-acid plaster-mull should be employed; in others a carbolyzed zinc or simple ointment is appropriate. Chronic eczema of the scrotum, with much thickening, requires the cautious use of tar or mercurial preparations, such as the white precipitate ointment, Bronson's mercurial ointment (No. 23, p. 64), or the tar paste (No. 75, p. 138). Eczema of the anus requires attention to possible causes in the way of ascarides or hemorrhoids, with careful regulation of the diet and evacuations. A 3- to 5-per-cent. carbolic-acid lotion, or water as hot as can be borne, applied to the anus immediately after each defecation will do much to relieve the itching. Lassar's paste (No. 2, p. 43) and the tar spirit or ointment (No. 22, p. 64, No. 45, p. 104) are useful applications. Van Harlingen recommends a carbolyzed almond-oil very highly.

Eczema of the nails is a very chronic affection, in which the nails become rough, uneven, and marked with dark striæ or dots. The various tar applications or the milder mercurial salves must be persistently used.

Eczema barbæ is of frequent occurrence; the affected surface is reddened and covered with yellowish-green crusts that mat the hairs together; and as the hair-sacs are usually affected, folliculitis and destruction of these structures usually occur.



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ERYTHEMA MULTIFORME
PLATE XLVII

The parts must be shaved or epilated; mere clipping of the hair will not suffice. The various sulphur or zinc salves and pastes (Nos. 24, 25, p. 64, etc.) or the diachylon salve (No. 71, p. 136) can then be employed.

Eczema intertrigo must not be washed; the parts can be cleansed with warm olive-oil, and must be kept apart with pads of absorbent cotton. The various dusting powders (No. 18, p. 61, No. 64, p. 135) or the boracic-acid lotion or ointment (No. 29, p. 74) may be used.

Lichen tropicus or prickly heat is a more or less acute papulo-vesicular eczema occurring on the body during the hot weather. It is best treated by means of alkaline lotions (No. 67, p. 135) or the dusting powders (No. 18, p. 61, No. 64, p. 135). The zinc- and lime-oils (Nos. 65, 66, p. 135) are also useful.

ERYTHEMA MULTIFORME.

Synonyms.—Erythema exudativum multiforme s. polymorphum, *erythème polymorphe* (Fr.).

Definition.—An acute inflammatory disease, characterized by the appearance of reddish papules, tubercles, vesicles, or blebs of symmetrical distribution, and affecting by preference the backs of the hands and feet.

Symptoms and Course.—After a prodromal period marked by a moderate febrile movement, there appear on the backs of the hands and feet, or on the palms and soles, and more rarely on other parts of the body, a varying number of slightly elevated, firm, reddish-violet papules, fading on pressure. This condition is known as erythema papulatum. In a few days the papules grow into tubercles perhaps $\frac{1}{2}$ of an inch in size (erythema tuberculatum). The centers then begin to flatten and fade out, and assume a characteristic bluish-red hue (erythema annulare). At the periphery, where the eruption is extending, the lesions preserve their elevated form and reddish tint. Adjacent patches may coalesce and form irregular figures known as erythema gyratum and erythema figuratum. More rarely the appearance of blebs gives us the form known as erythema bullosum. Herpes iris is the designation given to a vesicular form of this erythema, in which new concentric rings of papulo-vesicles appear in the depressed purplish center of an annular erythema. These various forms, once looked upon as distinct diseases, are in reality merely stages of the same process with varying amounts of exudation. A case may go through several of them, and even show them simultaneously; for multiformity is characteristic of the disease; but usually one type only is present, and the commonest by far is the papular one. The malady occurs especially in the spring and the fall, and lasts for from four to six weeks. It happens at any age, and is somewhat more frequent in females than in males. The mucosæ are occasionally affected. It

is prone to relapse, and usually reappears in its original type. It is occasionally complicated with purpura, acute articular rheumatism, and endocarditis.

Etiology.—The cyclic course of erythema multiforme and its prevalence at certain seasons of the year lead us to believe that in some cases at least it is an infectious disease, though the etiological agent has not yet been discovered. It is sometimes, however, merely symptomatic, occurring with cholera, typhus, syphilis, and acute rheumatism, or after the ingestion of certain drugs. It is occasionally caused by local irritation, Kaposi having had a case in which the inunction of gray ointment always caused its appearance; or reflexly, as in Lewin's case, in which it was caused by irritation of the urethra.

Diagnosis.—Its typical course and location, the papules or tubercles whose red color is removable on pressure, and the absence of desquamation, are sufficient to characterize the disease. An eczema has exudation, scales, and crusts, and itches intensely. Urticaria has pale or pinkish fugacious elevations, with much itching and reflex irritability of the skin. A papular syphiloderm is copper-colored and not removable by pressure; the palms and soles are usually involved, and other syphilitic symptoms are generally present. Prurigo has deep-seated colorless papules, begins in childhood, and itches intensely. Trichophytosis corporis is scaly in the center, and the parasite can usually be readily found.

Pathology.—The process consists in an inflammation of moderate intensity of the upper portion of the corium, with vascular dilatation and some exudation and cell-infiltration.

Prognosis.—This is always good, save when the erythema is symptomatic of or complicated with some one of the more serious maladies mentioned above.

Treatment.—The cause must be removed when it can be found; and this is most likely to be possible when the erythema follows the use of some one of the drugs that react upon the skin, copaiba, quinine, antipyrin, etc. Rheumatism or any other coincident affection must be appropriately treated; and saline purges, tonics, etc., are useful adjuncts. The local treatment need only be of the simplest character, calamine lotion (No. 73, p. 137) or a cooling salve (No. 68, p. 135) or dusting powder (No. 64, p. 135) being all that is required.

HERPES.

Definition.—An acute inflammatory eruption, characterized by the appearance of groups of pinhead- to small pea-sized vesicles on slightly reddened bases, and situated usually on the face or genitals.

Symptoms and Course.—This very common affection begins with swelling and redness of the area affected, followed by the eruption thereon of small papules which rapidly become vesicular. The vesicles occur in groups of from six to twelve and

are often confluent. In one or two days their contents become cloudy, and in a few days to a week they dry up into thin crusts, under which repair of the epithelium progresses. Slightly pigmented spots are left behind when the crusts fall off, which disappear without trace in a week or two more. Moderate itching and heat accompany the eruption. Scratching and removal of the crusts prolong it, and may even lead to superficial ulceration.

Two chief varieties of herpes are encountered as the eruption affects the face or the genital regions. Herpes facialis, s. labialis, s. febrilis, or fever-sore, occurs around the mouth and nose near the mucocutaneous boundaries. The lips, cheeks, and alæ nasi are most frequently affected. Vesicles may appear on the mucosæ; but here, on account of the delicacy of the epithelial covering, they soon lose their vesicular form and appear as circular grayish or reddish eroded areas. Herpes progenerialis, s. preputialis, s. vulvarum, occurs on the glans penis, prepuce, labia majora, or nymphæ. Its course is similar to the herpes of the face, but it is very prone to recur at irregular intervals, and is liable to be prolonged and to ulcerate from the irritation caused by coitus or uncleanness.



FIG. 71.—Herpes febrilis.
From photograph by the author.

Etiology.—Herpes occurs frequently in healthy individuals, and we are ignorant of its real cause. It is often seen in febrile internal diseases, pneumonia, malaria, and meningitis, in catarrhal affection of the mucous membranes, bronchitis, rhinitis, etc., and also after nervous disturbances.

Pathology.—The inflammatory exudate is in the rete, and the amount of cell-infiltration varies with the intensity of the inflammation. The vesicles are multilocular.

Prognosis.—This is of course good; herpes facialis is short-lived, but herpes progenerialis is more obstinate and recurs frequently. The dangers of the possibilities of syphilitic inoculation must not be lost sight of in these latter cases.

Diagnosis.—This is of great importance in the genital variety, where the differentiation between herpes, chancroid, and chancre must always be made. The groups of vesicles or the convex-bordered confluent erosions in the favorite locations are sufficiently characteristic. In chancroid the vesicle rapidly becomes pustular; a round, undermined sore with dirty base results from its rupture; it is painful,

auto-inoculable, and is accompanied by the inflammatory bubo. Chancre has the induration and the characteristic hard, painless adenopathy. But it must not be forgotten that either or both may coexist with herpes, and that a definite opinion cannot be given in the case of chancroid for several days, and in that of chancre until the longest period of possible primary incubation has passed.

Treatment.—In many cases none is necessary. The crusts should not be removed, and a mild dusting powder (No. 18, p. 61) or a rose-water ointment or cooling salve applied to the part (No. 29, p. 74, Nos. 68, 69, p. 135). Dermatol, iodoform, etc., may also be employed. A layer of absorbent cotton between glans and prepuce will serve to protect the parts.

ZOSTER.

Synonyms.—Herpes zoster, zona, ignis sacer, shingles, *Gürtelrose*, *Feuerrose* (Ger.), *zona* (Fr.).

Definition.—An acute inflammatory disease of definite duration and course, characterized by the appearance of groups of vesicles on inflamed bases situated on the course of one or more of the cranial or spinal nerves, and accompanied by neuralgic pain.

Symptoms and Course.—For a varying number of days the patient suffers from burning, itching, and neuralgic pains in the area of the skin that is about to be affected, with perhaps a moderate pyrexia and its accompanying symptoms. Examination reveals nothing locally, save perhaps slight tenderness to deep pressure over the roots of the nerves that supply the skin of the part, or at the sensitive points of Romberg. Suddenly a circumscribed area of the integument becomes erythematous, and in a few hours is covered with a group or groups of minute papules, which rapidly become vesicles. In thirty-six to forty-eight hours they have become pea-sized, and the serum has become milky or frankly purulent; by the third or fourth day adjacent pustules have usually coalesced to form blebs of varying size. If they are not ruptured the serum is absorbed, the blebs shrink, and by the end of the week the affected area is covered with crusts of shriveled epidermis, under which repair of the destroyed integument slowly takes place. If the pustules or blebs are ruptured, excoriated or ulcerated surfaces are left behind, which heal in the course of the second or third week, often leaving behind depressed cicatrices, which are at first pigmented, and later white.

While the first groups of vesicles are passing through these various stages other groups have appeared on other areas of skin, or even among the original set. The successive crops appear along the course of the nerve at intervals of a few hours or a few days, and each one runs its own independent course, irrespective of the older or younger groups around it. Thus we may have present at the same time a red and pigmented scar, representing the primary efflorescence; excoriated surfaces with



ZOSTER PECTORALIS.



TYPOGRAVURE.

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ERYTHEMA MULTIFORME.

PLATE IV.



TYPOGRAPHURE.

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ZOSTER SACRO-CRURALIS.

PLATE LII.

the semi-detached epithelium still covering them; groups of coalescent bullæ; assemblages of pustules and vesicles large and small; and reddened areas where the primary erythema has but just appeared. The malady advances "*schubweise*," à *poussées successives*.

Zoster occurs at all ages, but is commonest in childhood. Lomer has reported a case in an infant four days old, and examples of it in elderly individuals are not very rare in our clinics. It shows no predilection for the weak or debilitated; healthy and vigorous individuals are frequently attacked. It is a moderately rare disease. My own statistics show thirty-two cases in eight thousand consecutive cases in private and public practice. It is seen most frequently in the spring and fall; sometimes it is apparently epidemic, a comparatively large number of cases appearing at the clinics; such was the case in New York City in the autumn of 1895. It is almost always unilateral, but double zoster does occur, and cases have been reported by Carpenter, Henoch, and others. It is a superstition of the laity that if shingles encircles the body it is necessarily fatal. Almost invariably one attack protects against the recurrence of the disease; but there are exceptions, and in Kaposi's celebrated case there have been eleven separate attacks.

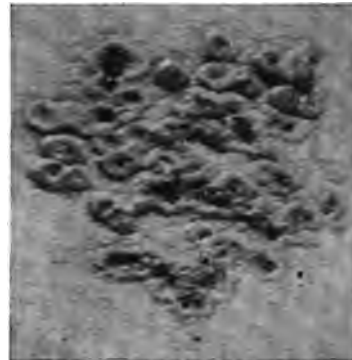


FIG. 72.—Zoster patch.
From photograph by the author.

Any portion of the body may be the seat of shingles, but I have found it most frequently by far on the upper extremities and chest.

For descriptive purposes the zosteres are named according to their location—zoster facialis, cruralis, etc.; but the only localization that deserves especial mention is zoster ophthalmicus. This is a severe affection and is frequently accompanied by conjunctivitis, corneal ulceration, panophthalmitis, destruction of the eye, and even by a fatal phlebitis and meningitis. In other cases, when the inflammation is severe enough to lead to the diapedesis of red as well as white blood-cells, we have the variety known as zoster hemorrhagicus. Very rarely indeed the inflammatory stasis is of sufficient extent and duration to cause gangrene, giving us zoster gangrenosus.

The neuralgic pains that precede and accompany the disease are frequently very severe, and they may persist for weeks and months after its termination. Tumefaction of the lymphatic glands of the affected area almost always occurs.

Etiology.—Bärensprung in 1862 first showed that the disease was in some cases dependent on an inflammation of the ganglia of the posterior roots of the cerebral and spinal nerves, inflammatory and hemorrhagic foci being found in these structures. In other cases a peripheral neuritis has been found. A number of cases have been reported in connection with traumatism, compression by tumors, pachymeningeal exudations, spinal caries, etc. The prevalence of the disease at certain periods of

the year has led Wasielewski to claim that it is an infectious disease, further evidence in that direction being afforded by the immunity from recurrence which one attack seems to confer. Probably an infection, like the other causes mentioned, may be the injury that starts the neuritis that is at the root of the disease.

Pathology.—Cell-multiplication and serous exudation occur in the tissue of the corium, and the latter raises the corneous layer and the upper rete-cells into a multilocular vesicle.

Diagnosis.—The vesicular eruption, the peculiar location following the course of a nerve-trunk, with the accompanying neuralgia, prevent any difficulty in this direction.

Prognosis.—This is good when there is no serious disease, such as spinal caries or carcinoma, behind the zoster eruption. In zoster ophthalmicus our prognosis must be guarded. In many cases an obstinate neuralgia is left behind.

No. 76. *Duhring's Morphine Collodion.*

Rx Morph. sulph. 1 part
Collod. flexile 100 parts

No. 77. *Laudanum Ointment.*

Rx Tr. opii 20 parts
Ac. carbolic. 1 part
Ol. amygd. dulc. 20 parts
Adip. lanæ 300 "

Treatment.—Zoster is a self-limited disease, and we cannot influence its course. For the neuralgia, quinine, antipyrin, and phenacetin may be given in large doses; and sometimes we are compelled to have recourse to morphine, either by the mouth or hypodermically. After the eruption has gone, arsenic in the form of the Asiatic pill (No. 6, p. 46) or as Fowler's solution is indicated. Locally we must protect and soothe the inflamed surfaces. A 20-per-cent. mixture of chloroform and olive-oil or a 5- to 20-per-cent. cocaine salve will be found useful. Duhring recommends morphine in collodion (No. 76, p. 144) painted on the part. I usually employ a laudanum ointment (No. 77, p. 144). The bitter tonics, iron, and cod-liver oil are generally required after the disease has run its course.

DYSIDROSIS.

Synonyms.—Pompholyx, cheiropompholyx.

Definition.—An acute inflammatory disease affecting the palms and soles, and characterized by the appearance of deep-seated grouped vesicles filled with a clear serum, later becoming opaque, and disappearing by rupture or absorption.

Symptoms and Course.—The affection is most commonly seen on the sides of the fingers and on the palms, and less often on the toes and soles; in rare instances other portions of the integument are affected. There appear smaller or larger, deep-seated, sago-grain-like vesicles arranged in groups and seated on a slightly reddened base. The clear serum with which they are filled becomes cloudy in a few days, and the

coalescence of adjacent vesicles may form larger blebs. In the course of a number of days they dry up or rupture, and the process ends with some exfoliation of the epidermis. Slight burning and itching accompany the eruption. The process may be a chronic one, and be prolonged for weeks and months by the appearance of successive crops of vesicles.

Etiology.—Dysidrosis occurs most often in nervous women, and more especially in those suffering from dyspepsia. We are ignorant of the real cause of its appearance.

Pathology.—According to Robinson, this consists in an obstruction of the sweat-duct and accumulation of fluid in the upper layers of the rete. A cystic degeneration of the sweat-glands has been noted by some observers.

Diagnosis.—The affection could only be confounded with a vesicular eczema, and it can readily be distinguished from this by the peculiar location and the absence of any tendency to rupture or form crusts or weeping surfaces.

Prognosis.—The malady is troublesome, but otherwise harmless.

Treatment.—The nervous and dyspeptic conditions underlying the malady must be attended to. Locally the 10- to 20-per-cent. collemplastrum of salicylic acid can be applied to the part. The tar spirit (No. 10, p. 56) is useful in some cases, and all the ordinary antipruritic remedies (p. 56) may be employed.

PEMPHIGUS.

Synonym.—*Blasenausschlag* (Ger.).

Definition.—An acute or chronic inflammatory disease, characterized by the appearance of successive crops of bullæ of varying size, containing a clear or cloudy serum, seated on slightly inflamed bases, and accompanied or not by constitutional symptoms of varying intensity.

Symptoms and Course.—Bullous eruptions occur in various diseases (syphilis, urticaria, leprosy, etc.); but in pemphigus they constitute the essential phenomenon of the malady. We distinguish two chief forms: pemphigus vulgaris, the commoner acute or chronic variety, and pemphigus foliaceus, a rarer and more serious disease.

In pemphigus vulgaris, with or without a prodromal fever, there appear on one or more portions of the integument, most frequently on the lower extremities and exceptionally upon the mucosæ, wheal-like erythematous spots that soon develop into the blebs that are characteristic of the disease. The bullæ are oval or rounded, with tense or lax walls, and are filled with a serum that is at first clear, but later becomes cloudy and purulent or even mixed with blood (pemphigus hemorrhagicus). Their size varies from that of a lentil to that of a large egg; they are seated on slightly reddened bases; there may be one only (pemphigus solitarius) or a hundred

or more; and they show no tendency to grouping or regularity of arrangement. They grow for several days, and adjacent ones may coalesce; in a week or so they have attained their full size, and retrogression commences. If the bullæ are not



FIG. 73.—Acute Pemphigus.
From photograph by the author.

ruptured the serum begins to disappear by absorption or evaporation; the tense walls of the blebs become lax and shriveled; and they dry up into scabs, under which regeneration of the epidermis takes place. The scabs fall off in time, leaving a temporary pigmentation, but no loss of tissue, behind. There may be only one outbreak, or successive crops of the eruption

appearing at irregular intervals may prolong the malady for several months. The subjective symptoms are usually limited to slight itching and burning. In accordance with its course, we have an acute and a chronic form of the disease.

Pemphigus vulgaris acutus is a rare affection, especially in adults; in children it assumes the form of an infectious disease and occurs epidemically. The outbreak of the eruption is accompanied by considerable fever and constitutional disturbance, and successive crops of blebs appear at frequent intervals for some two or three weeks. Any portion of the integument, and even the mucosæ, may be affected; but the backs of the hands and feet are most frequently involved. It is of importance from a diagnostic point of view that the palms and soles usually escape. As a rule the disease terminates in recovery, but some cases run a malignant course and end fatally. In the case of a woman sixty years of age, that I saw in the winter of 1895, the eruption began with moderate prodromal symptoms, and a few blebs appeared in the axillæ and on the chest; successive crops of vesicles came out almost daily, until in a week the entire body was covered with various-sized confluent and discrete bullæ and excoriated surfaces; the patient took to her bed and succumbed to an intercurrent pneumonia two weeks later.

Pemphigus vulgaris chronicus is the common form of the affection. The number

of bullæ present at any one time is very various; there may be only one, or an indefinite number may be scattered over the body. The individual blebs last but a few days; they disappear by rupture or absorption and evaporation, leaving scabs covering a red and secreting skin. The outbreaks occur irregularly, and various stages of the lesions are usually present at one and the same time. As a rule the malady runs a benign course, especially in children; the general condition remains good, there is little or no fever, and the local symptoms are comparatively slight. In rare instances it assumes a malignant form. The bullæ are numerous, run a rapid course, and frequently coalesce; and when



FIG. 74.—Pemphigus Vulgaris.
From photograph by the author.

they rupture, thick crusts covering suppurating surfaces are left behind. The itching and burning are great, sleep and nutrition are interfered with, and the patient dies of exhaustion or from intercurrent disease of the internal organs. In the severe form of the disease known as pemphigus diphtheriticus, the denuded areas left when the bullæ rupture become covered with a dense grayish-white pseudo-membrane; and in that known as pemphigus vegetans, frambœsia-like masses of granulations grow from them, which are very liable to undergo superficial gangrene.

Pemphigus foliaceus often begins as the ordinary form of the disease, by the long continuance of which the patient has been debilitated and worn out. The bullæ are small, with flabby walls, and have milky or reddish contents. After rupture and escape of their fluid contents, reddened, excoriated, and weeping surfaces are left behind, on which the epidermis shows no tendency to regeneration. The remains of the blebs with the dried secretion form partially detached threads and flakes. In

advanced cases the entire integument may be affected, and the palms and soles are especially liable to be involved. No bullæ may be present; the skin is dark red, dry or moist, and more or less covered with scales and crusts. The hairs become dry and brittle and fall out, and the buccal, conjunctival, and other mucosæ may become affected. The general symptoms are marked; there is fever, diarrhea, pain, and sleeplessness, and the patient finally dies of exhaustion.

Pemphigus pruriginosus is another malignant form of the disease, which is marked by continuous and intense itching, with pigmentation of the skin in consequence of the scratching that ensues. It is usually associated with nervous disturbances.

Etiology.—Pemphigus occurs much oftener in children than in adults; but we are entirely in the dark as to its nature and cause. Low and depressed states of the general system, such as result from overwork, insufficient nutrition, etc., seem to favor its development. It is neither infectious nor communicable. Parasitic organisms have been found in the blebs by Spillman, Vidal, and Gibier, but their etiological relationship to the disease has not been proved.

Pathology.—The fluid in the blebs is serous and alkaline, and contains a few leucocytes, epithelial and red blood-cells, etc. It lies between the stratum granulosum and the stratum lucidum, the covers of the single-chambered bullæ being chiefly composed of the corneous layer.

Diagnosis.—The presence of bullæ alone is not sufficient for the diagnosis of pemphigus, since they occur in a number of other diseases; but it is rarely difficult to form a definite opinion. The scattered, moderately tense, thin-walled blebs, appearing in successive crops, together with the general symptoms, are usually sufficiently characteristic. The same may be said of the heaped-up layers of shredded epidermis and the general reddening of the integument in the foliaceous form. Eczema is rarely bullous; the vesicles are smaller, and weeping surfaces, crusts, and other symptoms of catarrhal inflammation of the skin are present. Herpetiform dermatitis is distinguished by its polymorphism, erythematous areas, the presence of papules and vesicles, by its grouped herpetic arrangement, and by the itching. Bullous urticaria is rare, runs a very acute course, and has wheals and intense itching. Erythema multiforme is acute and does not relapse, appears in rings, and is seated usually on the arms and the backs of the hands and the lower limbs. Impetigo contagiosa has doubtless often been mistaken for pemphigus; but its location on the face and hands, slow course, and the presence of other cases in the same family, house, or school, should be sufficient to prevent error. It is not likely that scabies, with its location on the hands, arms, and genitals, its polymorphism, its characteristic tracks, and the history of contagion, will be mistaken for a pemphigus, even if bullæ are present. An ex-foliative dermatitis may resemble a pemphigus foliaceus; but the scales are larger and thinner, the skin on which they are situated is reddened and dry, there are no bullæ, and the malady does not advance in successive crops. The commonest source of error is probably a bullous syphiloderm; but here the individual lesions are



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IMPETIGO
PLATE XLVI

of slow course, dry up into thick, greenish-brown crusts under which ulceration takes place, and other evidences of lues are usually present.

Prognosis.—This should be a cautious one, for even the benign forms of pemphigus may become malignant in the course of time. In pemphigus foliaceus and vegetans it is always bad; they almost always end fatally, though the patients may survive for a long time. In a general way, the laxer the blebs, the greater the admixture of red blood-cells with their serum, and the more rapid the appearance of the successive crops, the worse the prognosis.

Treatment.—This must necessarily be almost entirely symptomatic. Any internal disease that may be present must be appropriately treated, and rest, abundant nourishment, fresh air, and general hygienic measures are of the greatest importance. Arsenic has been lauded by Hutchinson as almost a specific for the disease, and is undoubtedly of benefit. It may be given in the form of the Asiatic pill (No. 6, p. 46) or as Fowler's solution, 3 to 15 drops administered well diluted after meals. Sherwell has gotten good results from the use of linseed-oil both externally and internally; 1 ounce may be administered in milk three times daily.

No. 78. Unna's Soft Zinc Paste.

℞ Ol. lini
Aq. calcis
Zinci ox.
Cretæ aa. p. e.

The local treatment should consist of the puncture of the blebs, and the free use of one of the dusting powders (No. 18, p. 61, No. 64, p. 135) or a mild ointment, paste, or oil (No. 26, p. 70, No. 29, p. 74, No. 66, p. 135, No. 69, p. 135, etc.). Unna recommends a soft zinc paste (No. 78, p. 149). Sulphur baths (p. 41) may be tried. In bad cases the continuous bath recommended by Hebra is perhaps the most efficacious remedy that we possess, and contributes greatly to the comfort of the patient. It may be employed continuously for days, weeks, or even months, if proper arrangements are made for the renewal of the water, its maintenance at an even temperature, and the comfort of the patient therein. For pemphigus foliaceus, if extensive, it is the only method that promises relief. In pemphigus vegetans a vigorous curetting of the affected spots, followed by the free application of the tincture of iodine, has done very well in some cases. In pemphigus pruriginosus the bichloride bath (3i to the bath) may be cautiously used. In any case linseed-oil as recommended by Sherwell may be freely employed.

DERMATITIS HERPETIFORMIS.

Synonyms.—*Dermatite polymorphe prurigineuse à poussées successives* (Fr.), hydroa, hydroa herpetiforme.

Definition.—A recurrent polymorphous eruption, most often of vesicular type and herpetic arrangement, but showing also macules, papules, and bullæ.

Symptoms and Course.—This disease, first recognized by Duhring, is characterized by the variety of its lesions to such an extent that Hyde recommends dermatitis multiforme as a more appropriate name. Its exact relationship to hydroa, herpes gestationis, and pemphigus is not yet settled. With a preliminary fever, rigors, malaise, and gastric disturbance, there occur flat, slightly elevated, irregularly defined macules on a limited area of the body, which soon develop into vesicles or bullæ with cloudy, hemorrhagic, or purulent contents. They are arranged in groups or concentric rings. In about a week the vesicles rupture or dry up, and the crusts leave a pigmented surface behind when they fall off. New groups appear from time to time, run the same course, and thus prolong the disease for weeks and months. Any portion of the body may be affected, but successive crops usually appear at the margins or in the neighborhood of the primary eruption, and the disease is usually limited to a definite area of the body. The mucosæ may be affected; and here the eruption appears as a group of irregular superficial ulcerations, with dirty and unhealthy-looking bases. Intense itching is a marked feature. The malady occurs in both sexes and at all ages.

Etiology.—This is as yet entirely unknown.

Diagnosis.—The polymorphous nature of the eruption, its herpetic arrangement, the intense itching, the relapses at irregular intervals, and the good condition of the general health will serve to distinguish the malady from pemphigus, with which it has been long confounded.

Prognosis.—The malady is obstinate and of long duration, but is not accompanied with any danger.

Treatment.—Duhring recommends arsenic given persistently, and antipyrin has done good in some cases. Externally, medicated baths or the various antipruritic applications recommended for pruritus, eczema, etc., may be employed.

Impetigo, formerly considered a distinct disease, is to be regarded rather as a symptom, and has been proved by Bockhardt to be directly due to infection of the skin with pus organisms. By means of inunctions and inoculations with cultures of the staphylococcus pyogenes albus and flavus he caused the appearance of large single-chambered pustules seated on slightly inflamed bases. This occurs in a variety of conditions when purulent processes are present in the person affected or those that he comes in contact with. There appear one or a number of isolated vesicles or vesico-pustules, which finally develop into small, rounded blebs filled with pus. They dry up into yellow superficial crusts, which leave a reddened and slightly pigmented surface behind when they fall off. The malady is self-limited and runs its course in two or three weeks.



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IMPETIGO CONTAGIOSA

PLATE XXII

IMPETIGO CONTAGIOSA.

Synonym.—*Porrigio contagiosa*.

Definition.—An acute inflammatory contagious disease, marked by the appearance of one or more isolated vesicles or pustules, drying up into yellow adherent crusts.

Symptoms and Course.—With or without febrile disturbance, there occurs an eruption of circumscribed, small, thin-walled vesicles, which soon enlarge in size and become distinctly pustular.

Umbilication is occasionally present. After persisting for a few days they dry up into bright-yellow adherent crusts, looking, as Tilbury Fox says, as if stuck on to the skin. Adjacent pustules and crusts may coalesce to form larger affected areas; but they are always sharply limited, and the surrounding skin and that between the lesions are not affected. In the course of two or three weeks the crusts fall off, leaving a reddened and slightly pigmented skin behind. Neither ulceration nor scarring occurs. Successive crops of pustules appear from time to time, either among the older crusts or on other places, and thus the disease may be prolonged for weeks. The subjective symptoms are confined to slight itching. The seat of the malady is usually on the face around the mouth, chin, and nose; the backs of the hands are not infrequently affected, and



FIG. 75.—*Impetigo contagiosa*.
From photograph by the author.

occasionally the pustules appear on the neck, buttocks, and other portions of the body. The mucosæ are sometimes involved. The malady is seen almost exclusively

in children; it is contagious, and appears in epidemics, of which the very severe one on the island of Rügen in 1885 is a well-known example. Localized epidemics occur every fall, many cases occurring in the same tenement-house, street, or school. It is far more frequent among the poor, where the conditions of uncleanness, close contact, etc., necessary for its development, are most often found.

Etiology.—Impetigo contagiosa is most probably due to direct local infection with pus-cocci. It is both auto-inoculable and inoculable on others.

Pathology.—The pus collections are covered with epidermis; the corium is not involved, and cicatrization does not result.

Diagnosis.—The discrete and isolated pustular lesions or adherent yellow crusts, the absence of surrounding inflammation, and the inoculability will serve to distinguish the disease. It is liable to be confounded with a pustular eczema of the face; but here the surrounding inflammation, the weeping surfaces, the absence of discrete lesions, and the history of contagion should suffice to prevent mistake.

Prognosis.—This is good; the malady ends spontaneously in from two to three weeks.

Treatment.—The crusts should be softened with olive-oil and removed, and the surface of the skin below treated with Lassar's salicylic-acid paste (No. 2, p. 43). Further contagion may be avoided by cleanliness, together with a daily sponging of the faces and hands of the children with a mild bichloride or other antiseptic lotion.

DERMATITIS EXFOLIATIVA.

Synonym.—Pityriasis rubra.

Definition.—A general inflammatory disease of the skin, characterized by uniform deep redness and an abundant, large, thin-scaled desquamation.

Symptoms and Course.—The malady begins with the appearance of red scaly patches, which rapidly extend and coalesce until the entire integument is affected. The skin is uniformly and deeply reddened, but dry and shiny, and is covered with thin, papery, whitish scales. On the face these scales are small, but on the trunk and limbs they are larger and may be an inch or more in size. They are attached at their centers, but free at the margins, and they frequently overlap more or less like the shingles on a roof. The amount of scaling may be very large, even up to one or two pints daily, and heaps of scales fall out of the patient's clothing when he removes it. The nails become opaque and fissured, or are raised from their bases by the collection of epithelium beneath them. The hair becomes thin and falls out. On the palms and soles the epidermis may fall off *en masse*, like a cast. The redness of the skin under the scales is diffuse and even, and besides this and the scaling there are no dermic lesions. The subjective symptoms are confined to itching or a feeling of tension of the skin. In mild cases there are no constitutional symptoms; but in the severer ones the general atrophy of the skin that occurs in the course of



TYPOGRAPHURE.

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DERMATITIS EXFOLIATIVA.

PLATE VII.

time causes stiffness and disability, curvature of the fingers, ectropion, etc., and the patients may die of general marasmus or tuberculosis of the internal organs.

Etiology.—The cause of the disease is unknown; it is supposed to be dependent on tuberculosis.

Pathology.—The malady is essentially a chronic dermatitis, which is at first superficial, but later involves all the structures of the skin. There is a general cell-infiltration, and finally a formation of new connective tissue with subsequent atrophy. The skin shrinks, the papillæ and the glandular structures are destroyed, and the entire integument becomes too small for the body.

Diagnosis.—Exfoliative dermatitis is characterized by the rather sudden onset, the diffuse dry redness, the scaliness, and the absence of any other forms of efflorescence. A general psoriasis may resemble it; but it never covers the body so entirely, and patches of normal skin will be seen somewhere; and the heaped-up silvery scales, with bleeding puncta beneath them, are distinctive. Pemphigus foliaceus has lax blebs, and dirty fatty scales situated on an eroded granular or secreting base. In universal eczema we have the thickened skin, small scales, and a polymorphous eruption—papules, vesicles, crusts, and weeping surfaces.

Prognosis.—This is always doubtful. The German authorities regard it as uniformly bad, but our experience here hardly confirms this view. Generalized cases usually terminate fatally, but less extensive ones recover.

No. 79. Salicylic-Sulphur Paste.

| | | | | |
|-----------------|---|---|---|----------|
| Rx Ac. salicyl. | . | . | . | 1 part |
| Sulph. depur. | . | . | . | 5 parts |
| Petrolati | . | . | . | 25 " |
| Zinci oxidi | | | | |
| Amyli | . | . | . | aa. 10 " |

Treatment.—We have not much control over the course of dermatitis exfoliativa. Care of the general health and the adoption of all means possible to promote general nutrition must be our main reliance. Arsenic has been recommended to be given as in psoriasis. Frequent warm baths are useful, as is the external and internal use of cod-liver- and linseed-oils. Painting the affected area with tar spirit (No. 10, p. 56), followed by a prolonged warm bath, with the subsequent use of the salicylic-sulphur paste (No. 79, p. 153), has been recommended.

PSORIASIS.

Synonym.—*Schuppenflechte* (Ger.).

Definition.—A chronic inflammatory disease of the skin, characterized by the formation of red, dry, easily bleeding, infiltrated patches, covered with whitish or grayish, glistening, heaped-up scales.



FIG. 76.—Psoriasis guttata.

Case of Dr. Ludwig Weiss. From photograph by the author.

of individual lesions covering the entire body. The extensor surfaces of the limbs

Symptoms and Course.—This very common skin affection begins uniformly with the appearance of a number of small, red, slightly elevated, and sharply defined papules, each capped with a minute silvery scale. They grow slowly by peripheral extension, the scaling and elevation both becoming more marked as the papules increase in size. Adjacent ones may coalesce so as to form irregular figures or larger areas with a thickened, infiltrated skin, which tends to fissure and crack at the joints and natural folds. The color of the psoriatic spots themselves is pale red or a dirty yellowish red, being more livid on the lower extremities; but it is more or less masked by the heaped-up scales that cover the efflorescences, and if the scales are permitted to accumulate the color of the eruption is white and silvery. The scales are peculiar, being very abundant and rapidly formed; so that when the disease is extensive the patient's underclothing may be so full of them that they fall out in showers when he removes it. They owe their white and glistening appearance to the presence of air between the lamellæ of the dried-up epithelial cells. When the scales are removed from a spot by scratching, a number of minute bleeding points appear; these are the scratched-off tops of the congested papillæ of the skin. The appearance is characteristic, and is of importance diagnostically. The size and shape of the individual lesions vary greatly; so also does their number; there may be only a few small papules, or one or more larger areas, or there may be thousands



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PSORIASIS
PLATE XVII

are the seat of election of the psoriatic eruption, the flexor surfaces being either free or, at all events, less extensively affected. The trunk, genitals, and scalp are frequently covered, but the face is rarely involved. The palms and soles are almost always free; in the rare cases in which they are affected there is diffuse thickening of the tissues, with scaling, and the diagnosis from a syphiloderm is both important and difficult.

The disease occurs most often between the sixth and the twentieth year; it is very rare in early childhood, though Elliot has recorded a case at the age of eighteen months. Its course is very variable, but it is essentially chronic. The majority of cases last for months or years, and many persist for life. The individual spots may slowly grow to a certain size and then remain unchanged for an indefinite period, or they may undergo retrogressive changes and new ones appear to take their place. At times and from unknown causes, the disease may almost or entirely disappear; but many patients are never quite free from it and suffer from attack after attack at varying intervals. When involution begins the faint red border around the patch becomes pale, the scaling lessens and stops, and the redness and elevation slowly subside. In the larger spots this process frequently begins in the center, while the disease is still progressing at the margins; and thus the various circinate and gyrate forms of the disease are caused.



FIG. 77.—Psoriasis diffusa.

Case of Dr. Louis Fischer. From photograph by the author.

Psoriatic patients are usually robust, and even in the most extensive generalized cases the general health is but little affected. The only subjective symptom, if any is present at all, is a very moderate amount of itching. The hairs are usually not affected, even when the scalp is the seat of the disease; in very chronic cases, however, their nutrition is finally impaired and they fall out. The nails, on the

other hand, are frequently involved and may be the sole seat of the disease. Small white puncta appear in the lunula and gradually spread, the nail finally becoming fissured, furrowed, dull, and scaly. The mucosæ are never affected, the so-called psoriasis buccalis being a leucoplacia due to syphilis, lichen ruber, etc.

In accordance with the form and the extent of the eruption, we have certain subvarieties of the disease. When there are many pinhead-sized efflorescences we



FIG. 78.—Psoriasis nummularis.
After Van Haren-Noman

have psoriasis punctata; this is rather rare as an independent variety, for although all forms begin as puncta, they do not usually remain so long. Psoriasis guttata has larger lesions, looking like drops of mortar flung upon the skin. In psoriasis nummularis the spots are coin-sized. Psoriasis gyrata, figurata, and serpiginosa are formed by the coalescence of guttate and nummular lesions. Psoriasis annularis is ring-shaped, retrogression having occurred in the centers of the nummular areas. In psoriasis diffusa the patches are large, irregular, and greatly infiltrated. In psoriasis universalis the entire body is affected; it is uniformly red, and is covered with scales that are rapidly cast off and regenerated; it is frequently difficult to distinguish from dermatitis exfoliativa. Köbner has called attention to an artificial form of the disease, which can sometimes be produced in a psoriatic patient by a pin-scratch or other lesion.

Psoriasis has but few complications. Eczema is the commonest of these, and is usually caused by too vigorous treatment. Seborrhea capitis is also seen.

Etiology.—We know very little of the causes of psoriasis. It occurs at all ages, save in young children, and in all conditions of life. It is undoubtedly hereditary; in a very large number of cases a history of its existence in the family can be obtained. The claims of various observers to have discovered a parasitic etiological factor have not been confirmed.

Pathology.—In spite of the great amount of labor that has been expended on this subject, there is some doubt as to the exact nature of the process. Apparently



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PSORIASIS CIRCINATA
PLATE XVIII

it is an inflammation of moderate intensity of the upper corium, with increased development of the rete, cellular infiltration around the vessels, and an enormous increase of the corneous layers.

Diagnosis.—The primary efflorescence of the disease is characteristic, consisting of bright, shiny, dry scales on a circumscribed reddened base, and showing bleeding puncta when the scales are removed. This, with its seat on the flexor surfaces, the non-involvement of the palms and soles, the slight itching, the absence of moisture and of falling of the hair, the chronic course and frequent relapses, forms a picture that is distinctive. It must be differentiated from: (a) chronic squamous eczema, which often resembles psoriasis closely, especially upon the legs; but eczema has no sharp boundaries, has serous exudation and crusting, itches greatly, is seated by preference on the flexor surfaces, and its scales are comparatively few, grayish, and sticky. (b) Seborrhea, which is a diffuse disease of the scalp, is comparatively pale and non-indurated, and has scales that are dirty gray and fatty. (c) Lupus erythematosus, which has gray adherent seborrheal scales, with processes projecting from their under

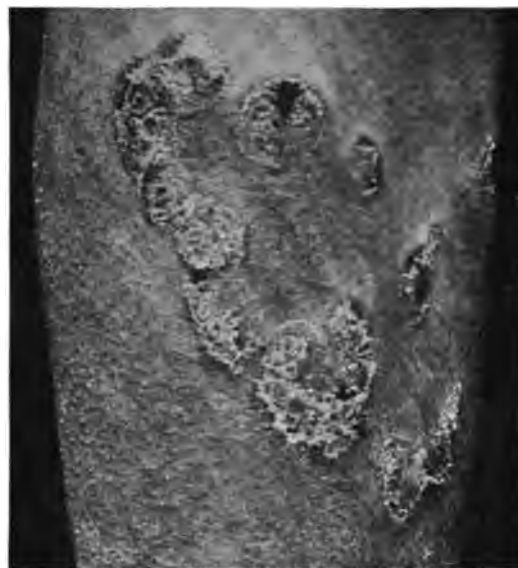


FIG. 79.—Psoriasis gyrata.
From photograph by the author.

surfaces that fit into the dilated orifices of the sebaceous glands, shows central atrophy of the skin and destruction of the hair when the scalp is involved, and is commonest on the face. (d) Lichen planus has lesions that are polygonal, waxy, and shiny; they are of a dull red color, show fine sparse scales and no puncta. (e) A squamous syphiloderm is often difficult to distinguish from a psoriasis. The lesions are more infiltrated, however; they are copper-colored, non-symmetrical, less scaly than those of psoriasis; they last only a short time; and other lesions of syphilis are almost always present. (f) Dermatitis exfoliativa, as above stated, may closely resemble a generalized psoriasis; but, however extensive this latter disease may be, there are always areas where discrete psoriatic lesions are visible, while the dermatitis affects the entire surface uniformly; the history of the disease will also help us to form an opinion.

Prognosis.—This is good as to life and the general health, but bad as to the cure of the disease. The psoriatic spots can be removed and the body cleaned, but the malady will certainly return sooner or later.

Treatment.—General hygiene and tonics are sometimes useful, though the health of these patients is usually good. Robinson recommends colchicum and potassic acetate (No. 80, p. 158) in gouty and plethoric subjects. Of the numerous internal remedies employed for the disease, only two or three deserve mention here. The most useful is undoubtedly arsenic; it may be given as Fowler's solution with the wine of iron, as recommended by Duhring (No. 81, p. 158), or more conveniently as the Asiatic pill (No. 6, p. 46). It must be persisted in for a long time in gradually increasing doses up to the limit of toleration; and from 500 to 1000 pills must sometimes be taken before a decided effect is observed. Fowler's solution given subcutaneously, 10 minims of a 1-per-cent. solution in distilled water, is of value in obstinate cases. The iodide of potash, given in gradually increasing doses up to 150 grains and administered in milk after meals, has given good results in some instances. Ichthyol and arsenic in combination (No. 82, p. 158) are also beneficial. Internal treatment is especially useful when the disease is extensive or the patient is disinclined to undertake the troublesome and uncleanly local measures that are required. The arsenical mineral waters, as those of Roncegno and Levico, can also be used.

No. 80. Diuretic Mixture.

℞ Kali acetat. 4 parts
 Spts. æther. nit. 2 "
 Vin. colchic. 1 part
 Syrp. aurant. 6 parts
 Aq. carui 24 " ad.
 3ii t. d., well diluted.

No. 81. Duhring's Arsenic Mixture.

℞ Liq. pot. arsenitis 1 part
 Vin. ferri 24 parts
 3i in water t. d. after meals.

No. 82. Ichthyol-Arsenic Pills.

℞ Ac. arsen. gr. i
 Ammon. sulph-ichthyolat. 3ii
 90 pills; 2 or 3 t. d. after eating.

No. 83. Pyrogallol Collodion.

℞ Pyrogallol 3 parts
 Bals. canaden. 2 "
 Collodion flexile 32 "

The local treatment is the more important, however, and it must be employed in the majority of cases. Any irritation or eczematous inflammation must be first gotten rid of by the use of Lassar's paste (No. 2, p. 43) or the zinc-oil (No. 65, p. 135). The scales must then be removed with hot water, a flesh-brush, and the green soap tincture (No. 5, p. 43). Of the local remedies to be employed, chrysarobin is the most reliable and efficacious. It is best used as a collodion (No. 51, p. 108), for its action can then be localized, and the indelible staining of the clothes that it occasions is much less marked than when it is used as an ointment. It excites a dermatitis if too freely applied to the unaffected skin, and an intense conjunctivitis if it happens to get into the eyes. It should therefore never be employed on the head and face. Under its use the scaling stops, the elevated masses subside, and there are finally left pale areas that represent the efflorescences of the disease, sur-



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PSORIASIS DIFFUSA
PLATE XIX

rounded by more or less deeply pigmented skin. The removal of this secondary pigmentation may be hastened by the local use of a citric-acid solution.

Pyrogallol may be employed, like chrysarobin, as a salve or a varnish (No. 83, p. 158). It is not as efficacious as the latter, but it does not cause conjunctivitis, or stain the skin and linen or dye the hair so deeply. It must not, however, be used over too extensive a surface, since cases of poisoning have occurred. Tar, as the tincture (No. 10, p. 56) or as Wilkinson's ointment (No. 38, p. 82), is sometimes useful. The ointment of ammoniated mercury is slow, but moderately effective; it is the preparation that should be used about the head and face. Anthrarobin in 10-per-cent. ointment is harmless, but not nearly so effective as the others mentioned. Finally, any of these drugs can be used in the form of salve-mulls, plaster-mulls, collempastra, or pencils in appropriate cases.

2. DEEP-SEATED INFLAMMATIONS AFFECTING THE CUTIS AND SUBCUTIS.

DERMATITIS.

Synonym.—Inflammation of the skin.

Definition.—An affection of the skin, characterized by the phenomena of inflammation, heat, redness, pain, and swelling, and ending in resolution, suppuration, or gangrene.

Symptoms and Course.—Inflammation of the skin occurs as the essential phenomenon or as a secondary condition in many skin affections, some of which have been already considered. In certain forms, however, the inflammation is the primary process, and is directly caused by irritation of the skin from without or through the medium of the blood; and these forms belong more specifically under this heading. The symptoms are the ordinary ones of inflammation of any organ, modified by the peculiarities of the skin and the predisposition of the individual. They can be produced artificially, as shown by Hebra. If a little croton-oil be rubbed into the skin for a short time, a transitory redness and swelling, the erythematous stage of dermatitis, are produced. This soon subsides and the process ends with a slight desquamation. If the action of the irritant is more prolonged we get successively the papular stage, with small elevated nodules appearing on the affected area, the vesicular and pustular stages, or the weeping stage, with a reddened skin secreting serum and pus. The inflammation may subside at any one of these stages, ending with desquamation, as the squamous stage; or the process may terminate in chronic dermatitis or in gangrene and death of the affected skin. Finally, when the inflammation involves the hair-follicles or the sebaceous glands, a circumscribed inflammation, such as we see in furunculosis and folliculitis, is set up. Varieties of the affection have been classified according to cause; we shall consider dermatitis traumatica, dermatitis calorica, dermatitis venenata, and dermatitis medicamentosa.

Dermatitis traumatica. Injuries to the skin cause the ordinary phenomena of inflammation, accompanied by itching, burning, or stinging. The process may not go beyond the hyperemic stage, but not infrequently suppuration with granulation and cicatricial repair, or even gangrene and sloughing, may result. Among its commonest manifestations are the excoriations from scratching, which form an important part of the lesions in the various itchy diseases. Each such traumatism, with its secondary inflammation, leaves a small deposit of blood-pigment in the skin, causing in the course of time that diffuse pigmentation which is seen as the result of long continu-



FIG. 80.—Dermatitis traumatica (local action of arsenious acid).
From photograph by the author.

ance of the pruriginous maladies.

Under this heading belongs the deep-seated or so-called parenchymatous dermatitis of the lower extremities, that so frequently leads to chronic ulceration as a secondary phenomenon. An injury, which may be very slight, a mere scratch or bruise, causes an inflammation in skin whose nutri-

tion is already depressed by imperfect circulation due to the dilatation of the veins and lymphatics and consequent œdema. Under these circumstances the process shows no tendency to repair, molecular disintegration occurs in the center, and the chronic leg ulcer, the varicose ulcer, results. This may remain stationary for months or years, or it may slowly grow in size until it occupies the greater portion of the skin of the leg. One or several may be present, and they vary greatly in shape, size, and appearance. Their margins may be steep or sloping, thickened and callous; their bases may be covered with necrotic tissue, or with abundant, easily bleeding granulations, or they may be red, dry, and shiny. The surrounding dermatitis is almost always extensive, and the amount of pain and tenderness varies greatly in different cases. This form of dermatitis is rare among the well-to-do, where the cleanliness and rest that are required for cure are usually promptly employed; but it is extremely common among the poorer classes, and is not only very



DERMATITIS TRAUMATICA.



TYPOGRAPHURE.

DERMATITIS HERPETIFORMIS.
PUSTULO-CRUSTACEOUS FORM.



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DERMATITIS HERPETIFORMIS.
VESICULO-BULLOUS FORM.

chronic, but sometimes absolutely incurable, since they do not give the inflamed skin the care that it requires, and prolonged rest is an impossibility for them.

Dermatitis calorica. Extremes of both heat and cold cause inflammation of the skin, but the former is by far the commonest causative agent.

Dermatitis ambustionis or combustio, the inflammation of the skin caused by a burn or scald, is a frequently severe and a common affection. In its lightest form, the erythematous, the action of the irritant has either been momentary or of slight



FIG. 81.—Parenchymatous dermatitis.



FIG. 82.—Parenchymatous dermatitis with ulceration.

From photographs by the author.

intensity. The skin is hyperemic, evenly pink or reddish, and there is moderate swelling and pain. The vascular dilatation soon diminishes, the redness fades, and the process ends in a few days with a slight desquamation. A severer form is the bullous one. The hyperemia is more marked, liquid and formed elements escape from the vessels, and semi-transparent globular bullæ or blebs filled with a yellowish serum are formed. The papillary vessels of the inflamed area are dilated, and the connective-tissue

fibers of the corium are swollen and infiltrated with cells. The serum may be absorbed and the blebs dry up into crusts under which the epidermis reforms, or they may be ruptured, and the cell-proliferation go on to suppuration and granulation, slowly terminating with more or less cicatrization. This is a much more painful and serious affection than is the erythematous form; fever is usually present; and when at all extensive, or when it occurs in debilitated subjects or at the extremes of life, it is liable to be fatal. Finally, in the escharotic form of combustio the irritant



FIG. 83.—Dermatitis ambustionis bullosa.
From photograph by the author.

has been severe enough to cause death of the skin, and perhaps of the deeper parts. The integument is brownish or blackish, or white when steam has been the escharotic agent. It may appear unaltered, but it is absolutely de-

stroyed; it is devoid of sensation and feels hard and dry to the touch. The dead mass must be cast off by the reactive inflammation of the adjacent living tissues with the formation of a line of demarcation and a suppurative process. The cavity left behind is filled up with new connective tissue, forming a scar without hair-papillæ or -glands. The subjective symptoms in this form of burn are marked and grave. Usually more than one variety or stage of dermatitis ambustionis is present in the same patient.

Dermatitis congelationis or frost-bite also occurs in three degrees. Predisposition to its occurrence, especially in the lighter forms, seems to be necessary; for healthy and vigorous individuals are not affected even after considerable exposure to cold. The mildest or erythematous form is the common chilblain or pernio. This occurs on the hands and feet, more rarely on the nose and ears. It appears as a bright-red or livid elevated area, and is accompanied by much itching and pain. A sluggish inflammatory process is set up, which may end in resolution or go on to ulceration. In the bullous form blebs appear exactly as in combustio. In the severest or escharotic form there are large bullæ, possibly with hemorrhagic contents, or the skin is white, cold, and senseless. The part is gangrenous, and must be cast off by suppuration; and phlebitis, septicemia, and death not infrequently occur. More often than in similar lesions caused by heat, however, there is a suspension rather than a cessation of vitality, and with appropriate treatment the part may return to the normal after an inflammation of greater or less severity.

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DERMATITIS VENENATA
PLATE IX

Dermatitis venenata. When due to the action of poisonous plants the inflammation may be erythematous, papular, vesicular, pustular, or bullous in form, according to the susceptibility of the skin and the amount of irritation caused by the poison. Some persons can handle the poisonous plants with impunity; others suffer slightly when they come in contact with them; while others, again, have the severest forms of the eruption when they come in their neighborhood. Individuals once affected are very liable to have recurrences at certain times, more often in the spring and the fall. Most usually the eruption is markedly vesicular, with much swelling and erythematous redness. The hands and face are most frequently affected, and



FIG. 84.—Dermatitis venenata.
From photograph by the author.

by direct transfer of the poison the genitals are usually involved. The malady lasts from one to several weeks. When due to the local action of drugs or to dyes in the clothing the inflammation may be very severe; vesicles and bullæ appear, and even gangrene may result.

Dermatitis medicamentosa is an affection that closely simulates other cutaneous disorders, and is doubtless often mistaken for them. A large number of drugs, many of them in common use, may give rise to it. The eruption is frequently pustular, and the peculiar drug has in many cases been found in the pus. This seems to be largely due to an attempt on the part of the glandular structures of the skin to eliminate the foreign material. Such are the common iodine and bromine eruptions. Others are exanthematous and are accompanied by constitutional symptoms. Arsenic and copaiba cause a papular eruption similar to erythema multiforme. Atropia, belladonna, and chloral cause a scarlatinoid rash. Opium, quinine, turpentine, and salicylic acid cause an erythematous eruption.

Etiology.—Dermatitis traumatica is caused by contusions, wounds, pressure, as of tight clothing and bandages, excoriations with the finger-nails, lesions from tools used in the trades, and the non-toxic bites and stings of animals and insects. Der-

matitis calorica is due to the action of flame, hot or exploding vapor, hot solids or liquids, acid or alkaline caustics, lightning, electricity, and the sun's rays, or to cold air, snow and ice, etc. Dermatitis venenata is occasioned chiefly by the plants of the *Rhus* family, probably on account of the volatile toxicodendric acid that they contain. Two varieties are found on this continent, the *Rhus venenata*, poison-sumac or -dogwood, and the *Rhus toxicodendron*, the poison-ivy or -oak. The aniline dyes now so extensively used may cause dermatitis, as do also cantharides, savin, mezereon, arnica, mustard, croton-oil, mercurial salve, and other substances, when applied to the skin. Dermatitis medicamentosa may be caused by a large number of drugs, among which we may mention iodine, bromine, arsenic, atropia, chloral, copaiba, mercury, morphia, quinine, salicylic acid, and turpentine.

Pathology.—The process is a simple inflammation of the skin of varying intensity, sometimes affecting the deeper parts and accompanied by certain secondary lesions, ulceration, etc. The ordinary phenomena and results of inflammation need no recapitulation here.

Diagnosis.—The history of the cause is usually obtainable; the patient has been exposed to heat or cold or to injury, or he has been taking some one of the above-mentioned drugs. The marked vesicular eruption of poison-ivy, its location on the hands, face, and genitals, and the fact that the patient has been in some locality where the plant exists, will serve to prevent mistake.

Prognosis.—This varies, of course, with the severity of the affection. It is good in the milder forms, but in the severer ones the possibility of incurability or the occurrence of gangrene, pyemia, and septicemia must not be lost sight of. In dermatitis calorica death may occur in the early stages from shock or later on from exhaustion and intercurrent disease. Severe burns, even if of slight extent, and burns that have not gone beyond the hyperemic stage, but involve one third of the entire integument, are of grave portent. In dermatitis venenata and medicamentosa the prognosis is always good.

Treatment.—In dermatitis traumatica the first essential of treatment is to remove the cause. The inflammation usually then subsides spontaneously, but its disappearance may be hastened by the use of cold compresses or lead-water applications. Later on Lassar's paste (No. 2, p. 43) may be used, and the salicylic-sulphur paste (No. 79, p. 153) is useful where there is much desquamation.

In parenchymatous dermatitis our first attention must be directed to the predisposing and active causes of the inflammation. All sources of irritation must be avoided and the dilated veins must be supported with a carefully applied muslin bandage. Elastic stockings are expensive, since they soon wear out, and the ordinary rubber bandage macerates the skin and confines the secretions. Rest in bed and elevation of the limb are of the first importance; unfortunately they cannot usually be employed in the patients that suffer from this affection. Of the many forms of treatment, I have found the most generally useful to be that with the



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DERMATITIS PARENCHYMATOSA
PLATE X

glyco-gelatin, recommended by Unna. The entire leg and foot are first thoroughly washed with hot water and soap, and then the whole surface is antiseptically cleansed with a 1-per-cent. creolin or a 3-per-cent. carbolic- or a boracic-acid solution. After drying, the glyco-gelatin (No. 4, p. 43), melted in a water bath, is evenly applied with a broad brush; as it dries it is to be dabbed over with a fluff of cotton to increase its strength. A little iodoform is powdered over the sore, to be replaced by subnitrate of bismuth or dermatol if there is much secretion; and if the granulations are abundant they must be cut down with the nitrate-of-silver stick. A layer of silk protective and cotton is then applied over the limb from toe to knee; and after the glyco-gelatin has set, still another bandage. Before the gelatin is entirely hard a dry gauze bandage is evenly applied. Fenestræ may be cut in the bandages to facilitate dressing of the ulceration if thought desirable. The dressing may remain on for from four to fourteen days, according to the amount of secretion. Besides this method of treatment, I can recommend the use of Lassar's paste (No. 2, p. 43) if the dermatitis is very intense. Bad cases may require ablation of the indurated edges of the ulcerations, skin-grafting, ligation of the dilated veins, etc.

No. 84. Carron-oil.

| | | | | | | | |
|----|------------|---|---|---|---|---|----------|
| R̄ | Thymol | . | . | . | . | . | 1 part |
| | Menthol | . | . | . | . | . | 90 parts |
| | Aq. calcis | | | | | | |
| | Ol. lini | . | . | . | . | . | 500 " |

No. 85. Ichthyol Collodion.

| | | | | | |
|----|--------------------------|---|---|---|---------|
| R̄ | Ammon. sulph-ichthyolat. | . | . | . | 1 part |
| | Collod. flexile | . | . | . | 5 parts |

No. 86. Dühring's Poison-ivy Lotion.

| | | | | | |
|----|------------------------------|---|---|---|----------|
| R̄ | Extract. grindeliæ rob. fld. | . | . | . | 1 part |
| | Aquæ | . | . | . | 50 parts |

The treatment of burns consists, in the first place, in the use of stimulants as may be necessary, together with the administration of a full dose of opium or morphine. In burns of the erythematous and bullous degrees the blebs and vesicles should be punctured and the parts thickly dredged with starch or flour to protect them from the air and save the patient the excruciating pain that contact occasions. A good plan is the following: after the blebs are emptied the parts should be thoroughly cleansed with a 5-per-cent. salt or a 1-per-cent. creolin or a boracic-acid solution; then carron-oil, possibly with the addition of thymol and menthol, should be used (No. 84, p. 165), or the lime-water-and-zinc paste (No. 78, p. 149). The iodoform treatment is applicable especially to severe cases, but is excellent for general use. After antiseptic cleansing the parts are covered with iodoform gauze, then with gutta-percha tissue, and lastly with cotton and a bandage. The cotton should be changed whenever the discharges soak through it; but the gauze may remain in situ for from eight to fourteen days. If the burn is extensive, or the patient is a child or aged, and iodoform poisoning is feared, the creolin gauze may be used instead. The sub-

nitrate of bismuth or dermatol, with gauze, cotton, and a bandage, is often used. In bad and extensive cases the permanent water bath has given good results. The patient is suspended in the bath by a stout sheet attached to its edges. Skin-grafting is often required for the extensive ulcerations left from burns.

For chilblains stimulating applications and local frictions are useful. Hot compresses may be applied frequently for short intervals of time. The 5-per-cent. collemplastrum of salicylic acid or a 10-per-cent. ichthyol collodion (No. 85, p. 165) is a good local application. In obstinate cases the epidermis should be removed by the application of a mixture of equal parts of dilute nitric acid and peppermint-water once or twice daily. Severer frost-bites require frictions in a cold room with ice-water or snow to prevent too great reaction. Sloughing and ulceration must be treated with antiseptic dressings. Cases of suspended animation from cold should not be regarded as dead until after artificial respiration has been persistently tried a long time, for cases have recovered when apparently dead for hours.

In dermatitis venenata the parts should be protected from the air, and for this purpose alkaline lotions, bicarbonate of soda or borax, or a saturated solution of hyposulphite of soda, are useful. Dilute lead-water compresses are a favorite remedy. Duhring recommends *Grindelia robusta* very highly (No. 86, p. 165). The various soothing ointments, pastes, lotions, and oils can also be used (No. 26, p. 70, No. 29, p. 74, Nos. 65, 66, 68, 69, p. 135).

Dermatitis medicamentosa requires only symptomatic treatment after its cause is removed.

Cathode-ray dermatitis (see Plate XX.) has been seen in a number of cases. The lesions are those of an ordinary chronic or acute dermatitis, followed by marked exfoliation; but the deeper tissues, even to the periosteum of the bones, are sometimes affected.

ERYTHEMA NODOSUM.

Synonyms.—Dermatitis hemorrhagica, dermatitis contusiformis, *érythème noueux* (Fr.).

Definition.—An acute inflammatory disease, characterized by the formation of various-sized, rounded or oval, erythematous-looking nodes, situated most commonly on the lower extremities.

Symptoms and Course.—The malady usually begins with marked general symptoms—vomiting and fairly high fever, sometimes accompanied by delirium and pains in the joints. Then the eruption rapidly appears in the form of contusion-like nodes of considerable elevation, rounded or oval in shape. Their size varies from that of a nut to that of an egg; they are warm to the touch, surrounded by an œdematous area, and painless, but tender to pressure. Their color is at first rosy red, changing to a duskier and more livid hue, and not removable by pressure. They

never coalesce or suppurate. In the course of eight or ten days they gradually disappear, going through the color-changes that are seen in blood-extravasations, and leaving a temporary dark-brown discoloration behind. Three or four nodes only are usually present, and their number rarely exceeds a dozen. Their regular seat is on the lower legs, more especially on their tibial aspects; but they are sometimes seen on the arms, rump, face, and even on the mucosæ. Though the individual lesions last only a few days, a succession of fresh ones often prolongs the disease for two or three weeks. Recurrences are rare. Fairly frequent complications are purpura and erythema multiforme; rarer ones are inflammations of the joints and serous membranes, and ulcerations of the skin or mucosæ. The malady occurs in youth, and is most often seen in weak individuals. It is most frequent in the spring and autumn, and much commoner in the female than the male sex.

Etiology.—The cause of this rather rare disease is still unknown. It is probably an infectious malady related in some way to acute articular rheumatism.

Pathology.—This consists essentially of serous infiltration and blood-extravasation of the various tissues of the skin down to the subcutis.

Diagnosis.—Ordinary contusions may be mistaken for the nodes of erythema nodosum, but they never have the peculiar rosy color, are not usually multiple, are not rounded, there are no general symptoms, and there is the history of an injury. Syphilitic gummata may resemble them closely; but the antecedent pains are much severer, they are slower in their course, are very rarely seen in the young, and are almost always accompanied by other symptoms of lues, past or present.

Prognosis.—This is generally good, though the complications above mentioned may cause death.

Treatment.—This consists almost entirely in the symptomatic treatment of the initial fever and joint pains, with the administration of tonics. The disease will run its course without our aid. Lassar recommends the internal use of salicylic acid very strongly. Lead-water applications may be made to the nodes.

ERYSIPELAS.

Synonyms.—Rose, *Rotlauf* (Ger.), *érysiþèle* (Fr.).

Definition.—An acute infectious inflammation of the skin and mucosæ, caused by the growth in them of the *Streptococcus erysipelatis*, and characterized by a diffuse shiny redness with pain and swelling, and perhaps vesiculation, together with fever and general constitutional symptoms.

Symptoms and Course.—The malady usually begins with a chill, followed by a marked rise of temperature and constitutional disturbance. About twenty-four hours later the temperature falls and the eruption appears, beginning as an irregular, red, glazed patch, with moderate itching and burning. The affected skin is hot, tense, œdematous, and infiltrated. Its margins are sharply limited, and the eruption spreads

at irregular intervals, marked by exacerbations of the fever. After extending for from three days to a week, retrogression begins, usually at one border; the margin becomes indistinct, the redness and tension diminish, and the desquamation that marks the termination of the process begins. It may still, however, advance at the opposite margin; and it may thus travel around the head more than once, or cover large areas of the body (erysipelas migrans, erysipelas ambulans). In bad cases the œdema and swelling are very great. If the face is affected the entire visage is deformed, swollen, and red, the eyes are closed, and the saliva dribbles from the tumefied lips. Vesiculation and crusting may occur, giving us the varieties known as erysipelas vesiculosum, bullosum, crustosum; and subcutaneous abscesses and even gangrene may supervene.

The general symptoms are usually severe. The remittent fever may reach 105° to 107° . Temperature, pulse, and prostration are more dependent on the extent of skin inflamed than on the severity of the infection. The duration of mild cases is about a week; but the migrating form may last much longer, and the patients once affected are extremely liable to recurrences of the disease. The malady may occur anywhere; but it is most frequent on the face, commencing about the nares, where eczema, fissures, etc., are so common. When erysipelas occurs on the scalp there is always danger of the occurrence of meningitis, as shown by the advent of headache, delirium, stupor, and vomiting; and recovery is followed by falling of the hair. When erysipelas occurs on the scrotum gangrene is a frequent result. The malady is extremely infectious.

As complications there may occur abscesses of the subcutis, gangrene of the affected part (erysipelas gangrenosum), suppurative inflammations of the joints and serosæ, etc. Death may happen from exhaustion or pyemia.

Etiology.—The *Streptococcus erysipelatis*, discovered by Fehleisen, is the cause of the disease; but a lesion of the skin is required for it to enter the lymphatics. This may be a surgical or an accidental wound, an excoriation, a pus-crust, or an acne pustule, etc. In many cases the lesion is so insignificant that it cannot be found. The surgical and obstetrical form of the disease is becoming rarer every year, as antisepticism and cleanliness are more carefully observed.

Pathology.—Erysipelas is a superficial or deep dermatitis of varying intensity, due to the growth of the cocci in the lymph-vessels and -spaces. The blood-vessels are dilated and distended with blood, and the cell-infiltration may extend down into the subcutis. Streptococci are heaped up in the lymph-vessels an inch or more beyond the red border of the disease on the skin.

Diagnosis.—The peculiar shiny pinkish-red and swollen area, with the general symptoms, is quite characteristic. An erythema has no general symptoms, no pain, and no infiltration. Acute eczema also presents slight general symptoms, or none at all; there are papules, vesicles, or weeping surfaces; there is less infiltration, and there are no sharp borders. Chronic dermatitis is called by some authorities erysipelas



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ERYSIPÉLAS

PLATE XXII

perstans, or chronic erysipelas; but the absence of the characteristic color and sharp outline, as well as its course, will serve to distinguish it.

Prognosis.—This depends on the grade and extent of the erysipelas, the length of time that it has been present, and the patient's general condition. The complications most to be feared are gangrene and meningitis. The border of the erysipelatous area will help us in deciding as to its future course; so long as it is sharp and elevated the disease will spread.

Treatment.—The application of antiseptics to the smallest wound, the segregation of erysipelas patients, and the careful sterilization of everything—instruments, hands, etc.—that has come in contact with them, will prevent the spread of the disease. The basis of the general treatment is a nourishing fluid diet, with the free use of alcohol in accordance with the amount of prostration. The fever must be combated with antipyretics and baths. The tincture of the chloride of iron given in full doses, 20 to 30 drops every two or three hours, is undoubtedly of service in many cases.

No. 87. *Ichthyol Collodion.*

℞ Ichthyol 1 part
Collod. flexile 5 parts

No. 88. *Ichthyol Ointment, No. 2.*

℞ Ichthyol
Aq. dest.
Adip. lanæ āā. p. e.

No. 89. *Ichthyol Lotion.*

℞ Ichthyol 1 part
Ether
Glycerin āā. 3 parts

No. 90. *Ichthyol Spray.*

℞ Ichthyol 1 part
Ether 10 parts

The local treatment consists, in the first place, in keeping the surface of the skin as clean and aseptic as possible by frequent washing with alcohol and ether containing a small amount of the bichloride of mercury. Crusts must be removed and pus evacuated. An ice-bag may be applied to the head if that is affected; but if gangrene is feared it should not be used. Ichthyol is the best local application that we can employ, and it has displaced almost all other remedies. It should be used as a 20- to 50-per-cent. solution, paste, collodion, or ethereal spray (No. 86, p. 165, Nos. 87, 88, 89, 90, p. 169). The most convenient is the collodion, which should be applied several times daily. On the head the ichthyol spray, followed by inunctions of linseed-oil, is efficacious. The ointments and lotions must be rubbed in from the area outside the patch toward the center, and in any case a surface at least 1 inch beyond the apparent margins of the disease must be treated. Resorcin in a 10- to 50-per-cent. paste or salve and the $\frac{1}{2}$ -per-cent. sublimate ointment (No. 43, p. 100) have also given good results. We may attempt to check the spread of the disease by applying strips of plaster 2 inches beyond its advancing border and painting them over with flexible collodion; and on the limbs rubber bands may be similarly employed.

CHANCROID.

Synonyms.—Soft chancre, non-infecting chancre, *ulcus molle*, *weicher Schanker* (Ger.), *chancrelle* (Fr.).

Definition.—A specific, local, contagious, auto-inoculable, spreading ulceration of the skin.

Symptoms and Course.—Chancroid has no period of incubation, the process beginning immediately after infection; but it is usually two or three days later before the lesion is perceived. It first appears as a minute nodule or vesicle, which rapidly increases in size and becomes pustular. In exceptional cases, where the virus has been lodged in a crypt or follicle, it may be one or two weeks before the patient's attention is drawn to it. The pustule finally ruptures or dries up into a crust, revealing the characteristic chancroidal ulcer. This in its early stages is round, with sharp, undermined, punched-out edges, surrounded by a narrow, vivid-red, inflammatory areola. No induration is present. The floor of the ulcer is irregular, bathed with pus, or covered with grayish fragments of necrotic tissue. As it grows to lentil-size suppuration becomes more profuse. A benign case goes on in this way for three to four weeks, until the ulcer has attained the size of a bean or a penny. When repair sets in the signs of inflammation diminish, the edges of the ulcer lose their



FIG. 85.—Chancroid.
From cast from life by the author.

sharpness, the areola disappears, and granulations spring up on the base of the sore. The seat of chancroid is upon the genitals in almost all cases, most often upon the corona, glans, prepuce, frenum, meatus, and labia minora; in very rare instances it has been found on other portions of the body. It is always very sensitive, and pain is a marked feature in extensive cases. There is often more than one at the same time; being auto-inoculable, parts that come in contact with the sore are frequently infected. The coalescence of adjacent lesions gives rise to ulcerations of irregular shape.

Sometimes the chancroid does not follow this comparatively benign course, but becomes phagedenic, assuming a diphtheritic or gangrenous appearance. It advances rapidly and leads to deep and extensive destruction of tissue. In other cases it heals at one margin while advancing at the other, forming the serpiginous variety of the disease. The lymphatic glands leading from the affected area are always swollen and tender, and a tumefaction of the inguinal lymphatic glands, the bubo, is a regular accompaniment of the disease. This latter frequently goes on to suppuration, the abscess bursts or is opened, and a large chancroidal ulcer,

with ragged, sloughing base and undermined edges, is left behind. The ulcerative process is frequently very chronic and may last for months; pocketing and sinus formation frequently occur; and I have known the destruction in one case to extend on to the abdomen and cause death by opening the peritoneal cavity. In any case the mark of the chancroidal process is permanent. The papillary layer of the affected skin is destroyed, and scars, contractures, and deformities result. Destruction of the frenum, phimosis, and paraphimosis are liable to occur, as are also erysipelas and gangrene. The possible presence of syphilis as a complication, the patient having contracted that disease at the same time as the chancroid, must never be lost sight of.

Etiology.—We can say nothing positive in this regard as yet, save that it is undoubtedly due to an organic body of some kind. Micro-organisms have been described by Ducrey and by Unna, but their relationship to the disease has not yet been proved.

Pathology.—The process is an acute inflammation of the skin, with rapid molecular destruction of the tissues. The corium under and around the ulcer is infiltrated with small cells, and the papillary layer is ultimately destroyed. The open mouths of the lymphatic vessels can be found in the bases of the ulcers.

Diagnosis.—The short incubation, the beginning with a pustule, the undermined irregular edges and dirty necrotic base, the inflammatory areola, the multiplicity, and the auto-inoculability are sufficiently characteristic of chancroid. It requires to be carefully differentiated, however, from two other conditions that are common on the genitals, chancre and herpes. Hard chancre has an incubation of from ten to fifty days; it begins as a papule, and is usually single; it has an extensive induration which remains long after the lesion has passed away; its edges are not undermined; it secretes a small amount of seropurulent fluid; and the swelling of the lymphatic glands is moderate, very hard, and painless. The absence of these points does not enable us,



FIG. 86.—Chancroidal ulceration of labia.
From photograph by the author.

however, to exclude chancre; we must wait for that until the longest possible period of primary incubation of syphilis has passed, since double infection may have occurred, and induration may appear around the chancroidal ulcer or in its scar later on. In herpes progenitalis we have grouped vesicles, not pustules; there is no tendency to spreading and no bubo; the affection is very superficial and not followed by scarring; there is usually a history of previous attacks; and the lesion has no necessary connection with coitus.

Prognosis.—In uncomplicated cases this is very good, but no opinion as to the presence of syphilis can be given until two and a half months later. The occurrence of bubo has no relation to the size or extent of the chancroid. In bad serpiginous and phagedenic cases death sometimes occurs by sepsis.

Treatment.—Scrupulous cleanliness and the prevention of contact of the sore with other portions of the integument by means of pledgets of cotton and bandages are essential. Our object in treatment is to transform the virulent into a simple sore. After thorough cleansing of the base of the ulcer pure carbolic acid can be freely applied, care being taken that all the recesses and crevices of the ulceration be reached. If that is not effective, nitric acid or the acid nitrate of mercury can be used in the same way. Hyde prefers the galvanocautery. In all these cases cocaine should be used to mitigate the pain. A simple iodoform or other antiseptic dressing suffices for the after treatment. In phagedenic cases the continuous hot-water bath at a temperature of 98° has given the best results.



FIG. 87.—Ecthyma.
From photograph by the author.

Ecthyma, like impetigo, is no longer regarded as a distinct disease, but rather as a form of cutaneous inflammation that occurs in various affections. It appears as a round or oval, deep-seated, yellow pustule, bean- to filbert-size, and situated on a markedly inflammatory base. The contents dry up into a thick, rough, adherent

crust composed of pus and blood. Under the crust we find a deep ulceration, with a grayish or reddish base covered with indolent granulations. The papillæ are frequently destroyed, and scarring results. The cause of the inflammation is always infection with pus-cocci, most commonly transplanted into the skin with the fingernails. Hence ecthyma occurs in the various itchy diseases, more especially in phtheiriasis, scabies, and urticaria, and is most commonly seen in poor and uncleanly individuals. Other diseases, as variola and chancroid, occasionally exhibit deep-seated pustules of ecthymatous form, probably on account of infection with pus-cocci as well as with the specific organisms of the main disease.

FURUNCULOSIS.

Synonyms.—Boil, furuncle, *Furunkel*, *Blutschwär* (Ger.), *furoncle* (Fr.).

Definition.—An acute circumscribed phlegmonous inflammation of the skin around a cutaneous gland, ending in necrosis of the central area, and caused by the presence of pus-organisms.

Symptoms and Course.—

A small punctate spot first appears on the skin, usually pierced in its center by a lanugo hair. This rapidly increases in size, and in a day or two becomes a circumscribed, elevated, hard, painful infiltration $\frac{1}{4}$ to 1 inch in diameter. It becomes acuminate, and in twenty-four to forty-eight hours a minute yellow point at the apex shows the presence of pus. Suppuration goes on for a week or longer, and then the furuncle breaks, and a day or two later the central core is extruded. The crateriform ulceration heals rapidly, leaving a temporary pigmentation and small permanent scar behind. Furuncles may appear anywhere on the body where



FIG. 88.—Furunculosis.
From photograph by the author.

there are sebaceous follicles and hair-sacs; but they are commonest on the neck, buttocks, axillæ, and in the external auditory passages. There may be one or many; but, since auto-inoculation usually occurs, the patients generally suffer from a succession of single boils or of crops of them, which may prolong the malady for months, forming the condition known as furunculosis. The amount of pain depends on the seat of the lesion and the tension that it is subjected to. It is frequently considerable in situations like the perineum and the external auditory meatus. Fever and constitutional symptoms often accompany the outbreaks.

Etiology.—Furunculosis is caused by the growth in and around the follicles of the skin of the pyogenic staphylococci. It is usually inoculated in the integument with the finger-nails. Certain constitutional conditions, and cachexias, diabetes, uremia, and the gastro-intestinal diseases of children, seem to predispose the skin to its occurrence. So also does the external use of tar, chrysarobin, and pyrogallol. It is not surprising that it is of common occurrence in many of the itchy skin diseases, more especially in eczema, scabies, and prurigo.

Pathology.—The circumscribed phlegmonous inflammation occurs in and around a follicle, most often a hair-sac, and involves all the tissues of the skin. The intensity of the inflammation is such that necrosis of the central inflamed area takes place, and the dead tissue is cast off as the "plug" in the reactive inflammation that ensues.

Diagnosis.—The hard, circumscribed, painful, acuminate infiltration with yellow apex is characteristic. An ecthymatous pustule has no core, is not so deep, and has a larger inflamed areola round it. Carbuncle is larger, often several inches in diameter, and flatter; it has two or more points of suppuration, and it is almost always single.

Prognosis.—This is almost always good. On the face, however, the dangers of phlebitis and thrombosis of the cerebral veins must not be lost sight of. When it occurs in the course of grave constitutional disease, like diabetes, furunculosis may be a more serious affection, and hasten a fatal termination by the pain, exhaustion, and loss of sleep that it occasions.

No. 91. *Menthol-oil.*

| | | | | | |
|------------------------|---|---|---|---|---------|
| R _x Menthol | . | . | . | . | 1 part |
| Ol. olivæ | . | . | . | . | 4 parts |

Treatment.—The cause, if possible, must be found and removed. The urine should be examined for sugar, and any underlying disease should be appropriately treated. Tonics are always useful in long-continued cases. Prophylaxis consists in cleanliness; frequent bathing, more especially with enough of the permanganate of potash added to the bath to give the water a claret color, is required. Internal remedies supposed to have a specific action on the suppurative process, such as the sulphide of calcium, and local procedures designed to abort the boils, have been

absolutely useless in my hands. The entire affected area should be thoroughly cleansed with sublimate, carbolic- or boric-acid solutions, and then a piece of the mercury-carbolic plaster-mull applied to the boil. This should be done at least three times daily. Incision, which should be free, and followed by a thorough curetting, is frequently required. Wolff recommends the thorough rubbing in of iodoform or aristol and an occlusive dressing after it. Boils should never be squeezed to express pus or necrotic tissue. In furuncle of the external auditory meatus the passage should be cleansed as well as possible with a warm 3-per-cent. boric-acid solution, followed by warmed menthol-oil on cotton (No. 90, p. 174).

CARBUNCULUS.

Synonyms.—Anthrax, *Brandschwär* (Ger.).

Definition.—An acute circumscribed phlegmonous inflammation of the skin and subcutis, ending in gangrene, and caused by the presence in the skin of pus-organisms. The term "anthrax," though commonly used for this affection, is incorrect; anthrax is a specific disease of animals and men caused by the *Bacillus anthracis*; its initial lesion is known as the malignant pustule, and it has no connection with the disease under consideration.

Symptoms and Course.—Carbuncle begins as a circumscribed, deep-seated, hard, painful, red, and erysipelatous-looking infiltration, of considerable extent from the first. It increases in size for about two weeks, and finally forms a firm, brawny, dusky-red or violaceous swelling. Points of suppuration appear in the center of the mass, from which a thin sanious pus trickles out; and from each opening a core or plug of necrotic tissue is finally expelled. The tumor softens in the center, the ridges of dusky skin between the numerous openings break down, and, after the sloughing is complete, the dead parts are cast off and a deep granulating ulceration is left behind. The size of the carbuncle varies from that of a child's fist to that of a dinner-plate; and by peripheral progression while sloughing and suppuration are going on in the center, extensive lesions, covering perhaps half the back, may be formed. In bad cases not only is there complete and extensive necrosis of the cutis and subcutaneous tissue, but even the muscles and the periosteum of the bones may be in-



FIG. 89.—Carbuncle.
Case of Dr. A. H. Ohniann-Dumesnil.

volved. An extensive stellate and often pigmented cicatrix is left behind when the ulceration heals.

The carbuncle is usually single, and its seat is most often upon the back, neck, cheeks, and lips. The constitutional symptoms vary with the extent of the inflammation and the general condition of the patient. Fever, gastro-intestinal disturbance, and general malaise are present in all cases, and in bad ones septic infection and pyemia may set in. Local extension may cause pleurisy, peritonitis, and cerebral or spinal meningitis. The entire process lasts from two to six weeks.

Etiology.—Infection with pus-cocci is the cause of carbuncle. This probably occurs simultaneously in a number of neighboring follicles. Diabetes, uremia, and a number of other constitutional conditions predispose to the occurrence of the disease.

Pathology.—The process is analogous to that in furuncle; the staphylococci excite a perifollicular inflammation which is intense enough to cause connective-tissue necrosis. The dead parts are then cast off by reactive inflammation.

Diagnosis.—From a furuncle a carbuncle may be distinguished by its greater size, its flatness, its multiple suppurative centers, and the fact that it is usually single. Malignant pustule is not so inflamed and brawny, nor so painful, and the characteristic organisms can be found in the fluids of the charbonous part.

Prognosis.—With the smaller tumors the prognosis is good; but in extensive cases, and especially in those occurring in the course of grave constitutional disease, it is bad. It should be guarded in any case; septicemia and pyemia may always occur; local spreading may erode the vessels and lead to a fatal hemorrhage, and the patient may die of exhaustion from the long-continued suppurative process.

Treatment.—Any underlying disease, diabetes or Bright's, must be appropriately treated. Tonics, a generous diet, alcoholics in moderation, and all other means to sustain the organism must be employed. In the beginning the mercury-carbolic plaster-mull is useful. Free and deep incision followed by a thorough curetting is undoubtedly of benefit in some cases, but complete surgical extirpation of the tumor is better. The ethyl-chloride spray may be employed to anesthetize the parts before operation, and the wound should be dressed with iodoform. In moderately extensive cases the old-fashioned method of poulticing to promote the separation of the sloughs is perhaps as good as any.

THE GRANULOMATA.

The granulomata are inflammatory processes somewhat similar to the new growths. They are all caused by the invasion of the integument by a microorganism, though in some cases no decision has yet been reached as to its exact nature. They are: (1) tuberculosis; (2) syphilis; (3) lepra; (4) mycosis fungoides; (5) lupus erythematosus; (6) rhinoscleroma; (7) actinomycosis.



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LUPUS VULGARIS.

PLATE XXV.

Several affections, formerly considered distinct diseases, have been found to be caused by the tubercle bacillus and are really tubercloses of the skin. The etiological factor and even the elementary pathological lesion are the same in all cases. They are small cell-accumulations containing varying numbers of the specific bacillus. They are, however, clinically distinct. We shall consider: (1) tuberculosis cutis; (2) lupus vulgaris; (3) scrofuloderma; (4) tuberculosis cutis verrucosa.

TUBERCULOSIS CUTIS.

True tuberculosis cutis is very rare, and occurs almost always from auto-infection in patients suffering from tuberculosis of other organs. It is seen in the skin around the mucous orifices of the body, about the mouth, nose, anus, and on the glans penis, infection being directly transmitted in the saliva and the discharges that come in contact with these areas. It appears as one or more small, shallow, painless ulcerations, $\frac{1}{2}$ to 1 inch in diameter, with flat borders, sloping margins, and with bases covered with reddish granulations, in which minute yellowish-white miliary nodules can occasionally be seen. In exceptional instances it is primary, and no tuberculosis of the internal organs has been found. The diagnosis is usually made, without much difficulty, from the presence of internal tuberculosis and the finding of tubercle-bacilli in the secretions. An ulcerating syphilide, the only affection with which it is liable to be confounded, has infiltrated hard borders and a dirty base, and other symptoms of lues are present. The prognosis depends on that of the internal lesions. The best local treatment is the thorough use of the sharp curette or the Paquelin cautery, followed by an iodoform dressing. Diluted acetic or chromic acid may also be employed.

LUPUS VULGARIS.

Synonyms.—*Lupus vulgaire*, *dartre rougeante*, *scrofulide tuberculeuse* (Fr.), *fressende Flechte* (Ger.).

Definition.—A chronic local tuberculosis of the skin and adjoining mucosæ, characterized by the appearance of various-sized, reddish-brown, soft, deep-seated nodules, with subsequent ulceration or interstitial absorption, and ending in cicatrization.

Symptoms and Course.—The lesion of lupus, the primary efflorescence, is characteristic; it is present to some extent in all forms of the disease, and the diagnosis of the malady rests finally upon its discovery. It is a pinhead- to small pea-sized nodule, yellowish or brownish red in color, and seated so deep in the corium that usually it does not project from the surface and cannot be felt. It is composed of a granulation tissue so soft that, when a pin is introduced into it, its point can readily be moved about in all directions. In many cases these nodules can be seen only with difficulty; but pressure on the part with a glass pleximeter or microscopic slide

(diascopy) expresses the blood from the surrounding parts, so that the lesion appears as a brown discoloration when seen through the transparent medium.

The lupoid process is varied in its manifestations, but its different names do not designate distinct varieties. They are all formed by groupings of numbers of the



FIG. 90.—Lupus hypertrophicus.
After Lesser.

primary lesions, together with the results and sequelæ that ensue. It begins always as a red spot, in which the primary nodule can be appreciated only with the aid of pressure. The spot is usually small in area at first, and in this stage the disease is known as lupus maculosus. The nodule increases in size very slowly, and it may be months before it becomes perceptible to the touch. When it attains the size of a small pea retrogressive changes, consisting of fatty degeneration of the new cells, with interstitial absorption, begin; there is rather abundant scaling (lupus exfoliatus), and the process ends with scar formation. In other cases disintegration and ulceration occur (lupus exedens or exulcerans). The lupoid ulcerations are rounded, shallow excavations, with soft red borders, and pink, granulation-covered, easily bleeding bases. Like all the other stages of

the disease, they are exceedingly chronic, lasting for months and years; there is moderate suppuration and crusting, but no pain. Not infrequently there occur papillary outgrowths from the bases of the ulcers—lupus papillaris or hypertrophicus; and larger connective-tissue masses in with the scar give us lupus verrucosus.

Groups of papules aggregated together give us the form known as lupus tuberculosus. If the lesions are isolated, we have lupus discretus; if they are spread over a large area of the body, lupus disseminatus. Very frequently they spread peripherally, the older ones breaking down and being absorbed while new nodules are appearing at the periphery of the patch; this variety is known as lupus serpiginosus. Of especial importance, and pathognomonic, is the appearance of new nodules in the scars that have resulted from the lupoid process.

The lupoid nodules are deep-seated in the corium, and the subcutaneous tissue is frequently affected. When the skin lies over cartilage, as on the nose and ears, the perichondrium and the cartilage itself are often involved in the destructive process, but the bones are rarely attacked. The disease may affect any part of the body, but is most frequent upon the face, and especially upon the nose; and here the process is most commonly of the tubercular variety. In bad cases of long standing it leads to terrible deformity: the cartilages of the ear and the alæ nasi may be destroyed; the anterior nares may be entirely closed up with cicatricial tissue; ectropion and other deformities may result from cicatricial contraction; a circle of ulcerations may



TYPOGRAPHURE.

SCROFULODERMA.



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LUPUS HYPERTROPHICUS.

PLATE LIII.

surround the mouth; while the rest of the visage is covered with cicatricial tissue. On the trunk the malady is usually extensive, very chronic, and of the serpiginous variety. On the legs the lesions are commonly of the warty, hypertrophic form. The malady is very rare on the scalp and genitals.

The mucosæ are usually affected secondarily, from extension of the disease from the skin around one of the mucous orifices; but it may occur primarily on the gums, on the tongue, inside the nose, on the conjunctivæ, and even in the larynx. Here the characteristic lesion is rarely seen; instead of it we have shallow ulcerations or patches of papillary excrescences. In the larynx the cartilages, and more especially the epiglottis, are frequently destroyed.

Lupus begins in childhood, and may last for fifteen or twenty years. As a rule, even in bad cases, the general health is not interfered with. It is seldom associated with internal tuberculosis, even when the lupoid ulcerations have invaded the buccal cavity. In the circumscribed cases but little scarring, and that superficial, results.

Etiology.—The cause of the disease is the presence of the tubercle-bacillus in the skin. This was first proved to be the case by Koch, and it has been confirmed by the experimental production of both local and general tuberculosis with the material derived from the lupus nodule. It seems probable that in a good many cases the disease is caused by direct inoculation, infection being gotten from kissing persons affected with tuberculosis of the lungs. For some unknown reason it is much commoner in females than in males. It is very rare before the third year of life, though cases have been reported in infants; and it seldom originates after puberty.

Pathology.—The lupus nodule is a granuloma, due to the irritation caused by the presence of the tubercle-bacillus and its products. It is a true miliary tubercle, a round-cell collection appearing first along the vessels of the cutis. The cells always undergo necrobiosis and fatty and cheesy degeneration; organization never occurs. The tubercle-bacilli are few in number and hard to find; they are most readily demonstrated in the new nodules on the margins of the lupoid patch.

Diagnosis.—Lupus usually presents a characteristic and readily recognizable picture, but in some cases the diagnosis is a matter of difficulty. It begins in youth; has a very chronic course; shows the characteristic nodules either to the unaided



FIG. 91.—Lupus vulgaris.
After Lesser.

eye or by means of diascopy; has painless ulcerations, with soft borders and exuberant granulations; is situated most frequently upon the face, more especially on the nose; destroys the cartilages, but does not affect the bones; and shows a continuous production of fresh lesions, sometimes in the scars of the formerly diseased area. It most frequently requires to be differentiated from syphilis of the ulcerative and gummatous forms, lupus erythematosus, tuberculosis cutis, and cancer. Syphilis is comparatively rapid in its development, covering in weeks an area that lupus takes years to occupy; its papules are hard, projecting, and copper-colored; its ulcers have elevated and indurated edges, sunken dirty bases, and are painful; its scars are at first pigmented; the bones are frequently affected; it usually begins after puberty; and other signs of syphilis are generally present. Lupus erythematosus has a bright-red border, a slight central atrophy, no ulceration, and the characteristic seborrheal scales with projecting plugs on their under surfaces. The ulcers of tuberculosis cutis are covered with weak, flabby granulations, occasionally show visible miliary tubercles, and generally coexist with tuberculosis of the internal organs. Carcinomatous ulceration should not be mistaken for lupus; its extreme hardness, its elevated and indurated edges, its pain, the involvement of the lymphatic glands, together with its almost invariable occurrence in old age, being characteristic. It does not seem likely that eczema, with its secretion, absence of ulceration and scarring, or rosacea, with its dilated vessels, comedones, and non-destruction of tissue, can be confounded with the disease.

Prognosis.—Lupus does not endanger life; but its intractability, and the deformities caused by the destruction of large areas of the skin, more especially upon the face, together with those caused by the inevitable contracture of the scars, render the prognosis bad. We are entirely unable to prevent the fresh appearance of nodules. Besides this, every case harbors the tubercle-bacillus, and the possibility of the infection of important organs or the system at large must not be lost sight of.

Treatment.—General treatment is of little use, since most of these patients enjoy good health. Creosote and cod-liver oil may be given, as for internal tuberculosis. Good effects, but no cures, have been gotten from the use of thiosinamine, recommended by H. von Hebra, a few minims of a 15-per-cent. alcoholic solution of the drug being injected between the shoulder-blades daily.

Local treatment consists in endeavoring to procure the absorption of the new tissue or in destroying and removing it. The first may be tried in the localized and non-ulcerative forms of the disease, the parts being covered with the salicylic-acid-creosote plaster-mull, or the mercurial plaster, which may be kept in place by means of glyco-gelatin (No. 4, p. 43), and should be changed daily. Good results, with comparatively little scarring, are sometimes obtained in this way. But in most cases, especially in the ulcerative and hypertrophic forms of the disease, it is best to proceed at once to the destruction of the granulomata. The most radical method is complete excision, followed by any plastic operation that may be necessary; it is



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LUPUS VULGARIS

PLATE XXVI

applicable, however, to only a few cases. Much more generally useful is curetting, which should be very thoroughly done, preferably under anæsthesia. There need be no fear of destroying the much more resistant healthy tissue. The application of a 10-per-cent. sublimate spirit should follow the operation. The Paquelin or the galvanocautery is a ready method of destroying the nodules, but it is very liable to be followed by the formation of hypertrophic scar tissue or false keloid, as has happened in my own experience. Scarification, followed by the application of mercurial plaster, is less efficacious, but is not open to the same objection.

Chemical substances are most frequently resorted to to destroy the granulomata. They should be used on the end of a wooden toothpick wrapped with a little cotton, which must be dug into each lupus nodule. Pure carbolic acid, or a solution of caustic potash, 1 to 2 of water, may be used. The nitrate-of-silver stick, sharply pointed, may be dug into each visible nodule; this is painful, but effective, and is still the favorite method with many dermatologists. Lactic acid has given very good results; it should be rubbed vigorously into the part by means of a swab, or it may be used in ointment form (No. 92, p. 181), applied on lint to the part for twenty minutes every other day. It acts better if scarification precedes its use. Ten-per-cent. pyrogallol ointment (No. 93, p. 181) will transform the lupoid tissue into a soft, dark mass, and destroy it. Very lately the use of cinnamonic acid has been highly recommended. One or two drops of the solution (No. 94, p. 181) are to be injected with the hypodermic syringe into each lupus nodule, especially at the margins of the patch; about ten injections can be given at a sitting.

No. 92. Lactic-acid Ointment.

℞ Ac. lact. 1 part
Adip. lanæ 9 parts

No. 93. Pyrogallol Ointment, No. 2.

℞ Pyrogallol 3 parts
Adip. lanæ 10 "
Petrolati 20 "

No. 94. Cinnamonic-acid Injection.

℞ Ac. cinnamyl
Cocaine mur. āā. 1 part
Spirit. vini 18 parts

Whichever method is selected, cocaine in 10-per-cent. solution externally or 1-per-cent. subcutaneously, or the ethyl-chloride spray, should be employed when no general anesthetic is used.

SCROFULODERMA.

Synonyms.—Lichen scrofulosorum, lichen lividus, acne cachecticorum, *gommes scrofuleuses* (Fr.).

All the so-called "scrofulous" affections are now regarded as either tubercular

or syphilitic in nature. The scrofulodermata are local tubercloses of the skin, closely related to true tuberculosis of that organ and to lupus vulgaris. At least three clinically distinct forms are to be described under this heading, according to whether the tuberculous nodule remains a small, circumscribed, non-ulcerating, and non-degenerating tumor, or whether it develops into larger infiltrations that end in degenerative and suppurative processes.

1. Scrofuloderma papulosum, lichen scrofulosorum, or lichen lividus. This form of dermal tuberculosis is rare in this country; Hyde says it does not occur; yet I described and figured a case in the "Journal of Cutaneous and Venereal Diseases" as long ago as May, 1886. It appears as pinhead- to lentil-sized, flattish, slightly elevated, pale or livid red papules, moderately resistant, and mostly capped with a minute scale. They are arranged in groups of varying size, more rarely in rings, and there may be a single group or a number of them scattered over the body. Each single papule corresponds to a hair-follicle, and many of them are pierced by a minute hair; the skin between them is normal. The seat of the groups is most often upon the trunk, more especially on the chest, abdomen, and back; only in old and extensive cases are the limbs invaded. The malady occurs in young individuals only; it is very chronic, the individual lesions lasting a long time, and successive crops may prolong the disease for years. The papules disappear by absorption, leaving no trace behind, or they may go on to develop into the pustular form of the disease. They cause no subjective symptoms, and are sometimes discovered only accidentally.

2. Scrofuloderma pustulosum or acne cachecticorum is similar in its location and general symptomatology to the papular form, and probably follows it in most cases. The pustules rupture or dry up into crusts, giving rise to very sluggish, ecthyma-like ulcerations.

3. Scrofuloderma ulcerosum, scrofuloderma tubero-ulcerosum, or tubercular gummata. Here the tubercular mass forms a hard, painless, movable, nodular infiltration of varying size, deep-seated in the skin, which slowly turns into a cold abscess. The process may stop at any stage and the mass undergo fatty and cheesy degeneration, and even calcification; but it usually goes on to softening. The skin gets thin, red, and adherent, and there appear one or more perforations, through which a thin, purulent, detritus-containing material trickles out. Finally the integument gives way, and a painless ulcer, with lax, thin, undermined edges, an uneven base covered with pale, flabby, yellow granulations, and running a very sluggish course, is left behind. Crusts may be formed by desiccation of the secretion of the ulcer, and under these the destruction may extend far into the underlying tissues. Wolff records a case in which the frontal bone was perforated so that the pulsating dura could be seen at the bottom of the ulcer. One or several of these tumors or ulcers may be present. They finally heal with a flat, soft scar, which is depressed where bone or lymphatic-gland tissue has been destroyed. This is by far the commonest form of scrofuloderma; it occurs usually in the young, and may last for years.

Etiology.—The cause of these varying phenomena of cutaneous disease is the presence of the tubercle-bacillus in the skin. We do not know the special conditions that determine the occurrence of one or other form of these tubercular diseases. Negroes seem to be predisposed to them; and exposure to cold and wet, and want of pure air and proper food and exercise, seem to favor their development.

Pathology.—In scrofuloderma papulosum we are dealing with a tubercular perfolliculitis; the cell-accumulation is in the corium, more especially around the hair-papillæ. Jacobi and Neisser have found both giant cells and tubercle-bacilli in the papillæ. In the more extensive forms of tubercular infiltration they have also been found, but only in small numbers.

Diagnosis.—The lesion in the papular form of the disease is characteristic, one or more groups of discrete, painless papules, occurring in youth, of chronic course, and presenting no subjective symptoms. A papular syphiloderm, with which it may be confounded, has copper-colored, hard papules arranged in circles, appears on the extremities also, and is almost always accompanied by other symptoms of the disease. Lichen planus has polygonal, purplish, flat-topped papules, with a central depression. A papular eczema is more diffused, has vivid red acuminate papules, is accompanied by itching, and some vesicles will be always found.

The pustular scrofuloderm must be differentiated from the pustular syphiloderm. In the latter the infiltration is greater, the course is more rapid; it is found oftenest on the face, more especially upon the forehead; and other huetic lesions are generally present. Acne vulgaris is found on the face and back; it is acutely inflammatory, and accompanied by comedones.

The ulcerative scrofuloderm may be confounded with the gumma. But gummata occur mostly over bones, especially the sternum and tibia; they are harder, and run an acuter course; the gummy discharge is characteristic; they react to mercury and the iodide of potash; and other lesions of the disease can usually be found. After ulceration has occurred the scrofuloderma may be distinguished from the ulcerative syphilide by the sharp edges, extensive infiltration, pain, the circular or kidney shape, the good general health, the reaction to antiluetic treatment, etc., that characterize the latter. For the distinction of lupus vulgaris the exuberant granulations and the characteristic lupus nodules will suffice.

No. 95. Crocker's Lead Thymol Ointment.

| | | | | | |
|----|----------------------|---|---|---|-----------|
| Rx | Liq. plumbi subacet. | . | . | . | 3 parts |
| | Thymol | . | . | . | 1 part |
| | Petrolati | . | . | . | 100 parts |

Prognosis.—This is good; the scrofulodermata can usually be cured by appropriate treatment. The patient is always liable, however, to infection of the internal organs or the general system.

Treatment.—In all cases the internal treatment is of the greatest importance, and should be essentially the same as for other tuberculoses. A nourishing diet, good hygienic surroundings, fresh air, and more especially sea air, with salt-water baths, are required. Cod-liver oil and creosote are useful. Shoemaker recommends the chlorate of potash. In *scrofuloderma papulosum* Neisser has used chrysarobin locally with remarkable effect. The treatment originally recommended by Hebra, cod-liver oil internally and externally, is as good as any that we can employ; but it is disagreeable, since the skin must be kept soaked with the oil. Crocker recommends in its place a subacetate-of-lead ointment (No. 95, p. 183), cod-liver oil being used internally. The treatment of the pustular is very much the same as that of the papular form. Cod-liver oil or the iodoform plaster may be used locally. In the tubercular form, if the glands are softening and threaten to break down, arsenic should be given internally (No. 6, p. 46, No. 81, p. 158). Locally, if there is no fluctuation, a 10-per-cent. iodoform salve or the *collempastrum hydrargyri* should be used. If fluctuation is distinct we can prevent unnecessary destruction of the skin by incision. A thorough curetting, followed by an iodoform gauze tampon, is the proper method to pursue. When ulceration has occurred the overhanging edges of skin should be cut away and the surface dressed with iodoform. If the granulations are exuberant they may be cut down with the nitrate-of-silver stick, or a 1-per-cent. nitrate-of-silver salve, followed by pressure.

TUBERCULOSIS CUTIS VERRUCOSA.

Synonyms.—*Verruca necrogenica*, post-mortem, anatomical, or dissection tubercle, *Leichtentuberkel* (Ger.).

Definition.—A local tuberculosis of the skin, appearing as a vesico-pustular eruption or a warty outgrowth, usually situated on the hands, and resulting from direct inoculation with the tubercular virus.

Symptoms and Course.—At the site of an abrasion or wound there appear one or more vesico-pustules, situated on an infiltrated purplish area. The pustules dry up or are ruptured, and there begins a slow hypertrophy of the papillæ at the affected point, which develop into a livid red warty growth, often fissured, and situated on an infiltrated area of skin. Its progress is extremely slow, and it may persist for many years. Finally large, erythematous, infiltrated masses may be formed, with hypertrophic, warty, and fissured areas in their centers. Retrogressive changes occur spontaneously in the course of time, and a thin stellate or punctiform scar is left behind. The affection occurs in persons whose occupations bring them in contact with dead animals or their products,—cooks, butchers, hostlers, pathologists, etc.,—as well as in those affected with tuberculosis of the lungs, and their attendants. It appears almost always on the backs of the fingers and hands, these



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SYPHILODERMA PAPULOSUM

PLATE XXXVII.

being the parts most exposed to local infection. In rare cases erysipelas, septicemia, pyemia, or gangrene occurs in connection with the process. The malady is rarely reported, possibly because of its slight extent at first and very slow progress, and also because many cases occur among physicians who do post-mortem work, who destroy the growth themselves.

Etiology.—Infection with the tubercle-bacillus and its virus is the cause of the disease; this has been demonstrated both pathologically and by inoculation experiments on animals.

Pathology.—The diffuse infiltration is granulomatous



FIG. 92.—Tuberculosis cutis.
From photograph by the author.

in character, the papillary outgrowth and hyperkeratosis being secondary. Giant cells and the characteristic microorganisms have been found by Baumgarten and others.

Diagnosis.—Its occurrence on the hands in persons whose occupations render them liable to such infection or who suffer from tuberculosis of the lungs, and the slow progress of the warty growth, sufficiently distinguish the disease.

Prognosis.—This is very good, provided none of the accidental complications that are mentioned above occur.

Treatment.—This consists in the complete removal of the growth, which is readily effected, especially in the early stages. It may be done with the Paquelin or the galvanocautery, or with the curette, or by means of the mineral acids. The long-continued application of mercurial plaster will cause the gradual melting down and disappearance of larger growths. A good plan is to employ a strong salicylic-acid plaster for a time, causing the exfoliation of a part of the mass, followed up by the vigorous use of nitric acid.

SYPHILIS.

Syphilis, like the other granulomata, may affect any organ of the body; but it is especially liable to show itself in the skin, and most cases of the disease come within the province of the dermatologist. It is essentially wrong to classify the malady as a venereal one. The virus of syphilis is non-volatile and cannot be transmitted at a distance; prolonged contact with it, and probably the occurrence of a lesion of the skin or mucosæ, are necessary for its implantation. These conditions occur most frequently during sexual congress, and hence the point of entrance of the virus is situated in most instances upon the sexual organs. But in a proportion of cases so large as to be estimated at 20 per cent. by some authorities it is seated elsewhere, and is transmitted by other than sexual acts; and in another smaller proportion of cases it is gotten by heredity. Non-venereal syphilis, the syphilis insontium of Bulkley, is of sufficiently frequent occurrence to remove the disease from the small category of exclusively venereal maladies.

There are many points of resemblance between lues and the infectious granulomata on the one hand, and the exanthemata on the other. Like tuberculosis and leprosy, syphilis is a locally contagious disease, gotten always and only by the direct transfer of a definite virus, which increases enormously in quantity during the course of the malady, and runs a definite course with appropriate symptoms. And, like the acute exanthemata, syphilis has its regular period of incubation, its point of primary invasion, its regular succession of phenomena, and its sequelæ. It is really a chronic exanthematous disease.

These facts are explicable only on the supposition that, like the maladies of the other two classes, syphilis is caused by the growth in the body of a living organism. Such a one has, indeed, been described by Lustgarten and others; but positive proof of the exact nature of the etiological factor of luetic disease is still wanting.

Ricord was the first to classify the phenomena of the disease chronologically; and, although we have learned that his order is not an invariable one, it is sufficiently accurate to be of use, and has been generally accepted. After a period of primary incubation of from four to six weeks, during which the patient, though infected, shows no sign of disease, there begins the first or primary stage of the malady, marked by the appearance of the chancre or sclerosis at the site of inoculation of the virus, together with swelling of the adjacent lymphatic glands. This stage lasts some four to eight weeks. Then occurs another period of quiescence of from six to twelve weeks, the period of secondary incubation, during which the patient is apparently well, save perhaps for the presence of the remains of the primary lesion. This is followed by the secondary stage of the disease, marked by general constitutional symptoms and fever, swelling of all the lymphatic glands of the body, generalized eruptions, mucous patches, cephalalgia, angina, etc. It lasts for a varying number of months, and is followed by a third period of quiescence of

varying length. Finally there occurs in many cases a third stage, lasting for an indefinite number of years, in which occur the sequelæ of the disease—the more circumscribed and deeper-seated eruptions, gummatous and ulcerative lesions, and the affections of the bones and the internal organs.

Not all cases, however, exhibit this regular succession of stages separated by periods of quiescence. The tertiary stage may be entirely absent, or its characteristic lesions may occur very early in the course of the malady. The first and second stages, however, are never absent in any case of the disease.

We are only concerned here with those phenomena of syphilitic disease that occur on the skin and the mucosæ, and we shall consider: 1. The chancre; 2. The macular syphiloderm; 3. The papular (squamous) syphiloderm; 4. The pustular syphiloderm; 5. The tubercular syphiloderm; 6. The gummatous syphiloderm; 7. The ulcerative syphiloderm; 8. Syphilis of the hair and nails; 9. Hereditary syphilis, which differs in some important respects from the acquired variety, and demands separate consideration.

CHANCRE.

Synonyms.—Hard chancre, initial lesion, sclerosis, *ulcus durum*.

Definition.—The primary lesion of syphilis, appearing at the point of inoculation of the virus of the disease.

Symptoms and Course.—A chancre is not a definite lesion, since it may appear as a papule, a vesicle, an erosion, or an ulceration; but it is a disease entity, because the distinctive symptoms of induration and adenopathy always accompany it, and constitutional syphilis always follows it. It appears, on the average, twenty-one days after inoculation; but the limits of the period of primary incubation are wide, and it may show itself from ten days to ten weeks after the infection. In its commonest form it begins as a minute desquamating papule, and grows to be a moderate-sized, flat tubercle. In many cases it is an insignificant lesion, and, especially when located inconspicuously, as in the vagina, it may never attract the patient's attention. The skin over the papule may be merely reddened, or it may be eroded or ulcerated; and the ulceration may be shallow, with a smooth, shiny base and scanty, viscid secretion, or it may be deep and covered with diphtheritic sloughs and



FIG. 93.—Chancre.
From photograph by the author.

fragments of necrotic tissue. In rarer cases the lesion may be vesicular or even bullous from the beginning.

In almost all cases, however, there occurs after a time in the lesion a hardness or induration that is typical and has given it a name. It varies in density, but is usually cartilaginous to the touch. It may be so small in amount as to feel like a thin sheet of wax, "let in," as it were, into the base of the lesion; or it may be so extensive and thick as to be visible to the naked eye when the tissues are moved. It may be quite small, $\frac{1}{4}$ of an inch in size, or it may be $1\frac{1}{2}$ inches or more in diameter. It is the real lesion, the chancreous tumor itself; the appearance of the surface change being determined in each case by other and usually adventitious circumstances.

A second and characteristic concomitant of the chancre is the hard, stony, painless swelling of the lymphatic glands belonging to the tissue involved. A third one is the invariable occurrence, after a period of secondary incubation of some weeks, of some of the phenomena of constitutional syphilis.

The seat of chancre is most often upon the genitals, since those are the parts most exposed to contagion. It is common upon the glans penis, especially around

the meatus, on the sulcus and frenum, and on the prepuce; in the female it is most often seen upon the labia. But it is not infrequently seen on the thighs, lips, nipples, fingers, and other parts of the body. Its location depends upon accident, and I have observed it upon the forearm of a nurse who carried around a half-clad syphilitic child, and on the neck of a woman as the result of the over-affectionate kiss of a long-absent husband.



FIG. 94.—Exulcerated chancre.
From photograph by the author.

The chancre is generally a single lesion, but sometimes there are two or more, usually on contiguous parts. Its termination is in resorption; the papule or ulceration soon disappears, but it may be months or years before the last traces of the induration vanish. A pigmented spot, more rarely a scar, is left behind. Very characteristic is the almost entire absence of pain and tenderness, except when the ulceration is extensive and the sclerosis is complicated with other infection. Other complications are, in the first place, chancroid,

which is frequent and often obscures the diagnosis; phimosis and paraphimosis; gangrene; and, in debilitated subjects, phagedena.

Etiology.—The cause of the chancre is the same as yet unknown living organism that causes the general disease.



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SYPHILODERMA PAPULO-PUSTULOSUM

PLATE XXXIII

Pathology.—The chancrous tumor is a granuloma of the cutis, a dense round-cell infiltration, very similar to those that characterize the later stages of the disease. The cause of the peculiar induration is still a matter of doubt. Some authorities claim that it is due to an excessive development of the fibrillar connective tissue that incloses and subdivides the cell-mass.

Diagnosis.—Although its initial appearance varies greatly, as has been stated, the fully developed chancre possesses fairly well-marked features. Its advent two or three weeks after a suspicious intercourse; the tumor-like elevation and the induration; the absence of pain and noticeable secretion; but, above all, the indolent, stony, painless polyganglionic lymphadenitis, progressing gradually from the lymphatic glands nearest to the lesion to more distant ones until those of the entire body are involved—all these symptoms are characteristic. But the diagnosis from chancroid is often difficult and sometimes impossible. This is especially the case when, by the early and injudicious use of caustics on a sore of uncertain nature, an inflammatory induration has been set up that may closely resemble the specific one. Chancroid, indeed, is usually multiple, beginning as a round, deeply cut ulceration with undermined edges; it has an incubation of a few hours or a day or so, with the painful suppurating buboes, and is auto-inoculable. But a mixed infection may have occurred, and the chancrous and chancroidal virus may have been inoculated upon the patient at one and the same time; and a sore that presents the characteristics of the purely local lesion may in the course of time develop all the signs of the infecting chancre. Herpes of the genitals also, though usually multiple, and appearing as circular, shallow, short-lived erosions, unconnected with intercourse, and accompanied neither by the induration nor by the characteristic glands, may be so inflamed by irritating applications as to look not unlike an initial lesion.

In view of these considerations, and on account of the great practical importance of a decision as to the presence or absence of syphilis, it is well to make a probable and not a positive diagnosis of any suspicious lesion of the genitals until at least the ordinary period of incubation of the systemic disease has passed; to treat with cauterizing agents only such chancroidal-looking sores whose extension demands active interference; and to treat all other suspicious lesions with mild local measures alone.



FIG. 95.—Chancre of the lip.
From photograph by the author.

until the appearance or non-appearance of definite signs of systemic infection—polyadenitis, angina, exanthem, etc.—settles the question.

Prognosis.—A chancre is a lesion of small importance in itself, since it rarely causes discomfort, permanent injury, or deformity. The location or mode of origin



FIG. 96.—Chancre of the meatus.
From photograph by the author.

of the lesion has no connection with the severity of the systemic disease. There are, however, reasons for believing that the smaller the sclerosis, and the freer it is from ulcerative and other complicating processes, the less severe the subsequent manifestations will be.

Treatment.—Prophylaxis consists in a search for lesions of the skin and mucosæ after a suspicious contact, their cauterization when found, and the use of cleansing and disinfectant solutions; above all, of course, in the avoidance of intercourse or contact in any form with known syphilitics.

When the chancre has appeared, its excision with the knife or its destruction with the Paquelin cautery has proved to be of no use at all. The mercurial collemplastrum should be put on the sclerosis and on the indurated glands, or the ordinary mercurial plaster or ointment may be employed; and it should be continued until the hardness has entirely disappeared. If ulceration occurs, calomel, iodoform, or aristol may be used locally as a powder. Constitutional treatment should only be begun when the diagnosis is definitely settled by the appearance of secondary symptoms.

SYPHILODERMA.

Synonyms.—Dermatosyphilis; syphilis cutanea; syphilides.

Definition.—Macular, papular, vesicular, pustular, squamous, gummatous, or ulcerative eruptions, affecting the skin and its adnexa and the mucosæ, and caused by systemic infection with the virus of syphilis.

Symptoms and Course.—Although cutaneous syphilis appears in a variety of forms, the lesions in each case are generally of one kind only, and polymorphism like that of eczema does not occur. Many of them bear a close resemblance to other diseases, and the question of differential diagnosis is often a most important one. The manifestations are not, as a rule, accompanied by general symptoms or marked subjective sensations. A fever, sometimes quite high, with headache, anorexia, and muscular pains, may usher in the early secondary eruptions; but it is usually entirely absent. The deeper ulcerative lesions are sometimes painful,

but more often the patient has no complaint to make, and the eruption is sometimes discovered accidentally. With the early syphilodermata we usually find the sclerosis or its remains, the local and general adenopathy, the angina, the headache, etc. With the later ones there are often the osteocopic pains, the permanent alopecia, and the cicatricial remains of previous lesions. The lesions themselves may be macular, papular, tubercular, vesicular, pustular, squamous, bullous, gummatous, or ulcerative in form; occasionally two or more varieties are present at one and the same time. They are found anywhere on the body, but some of them show preferences for certain locations. The early eruptions are more or less general and superficial, and are most commonly macular or papular. The erythematous eruptions are usually most plainly seen upon the trunk; the papular ones are most prominent about the genitals; the tubercular forms reach their greatest development upon the face and neck; and the papulo-squamous lesions are commonest upon the palms and soles. In all forms the lesions show a tendency to assume a circular, semicircular, or crescentic shape; this is most marked, however, in the later circumscribed manifestations. In all save the macular forms the lesions are sharply limited infiltrations, elevated and moderately hard to the touch. Their color is peculiar. At



FIG. 97.—General macular syphiloderm.
From photograph by the author.

first bright red, they soon fade into a dull brownish red or coppery hue, which is commonly likened to the color of lean ham. These infiltrations are incapable of higher organization; they finally retrogress, and disappear by fatty degeneration and absorption or ulceration. In the later localized forms the infiltrations break down and ulcerate in their central older portions while the infiltration is still progressing at the periphery; and thus crusts of varying thickness covering ulcers with hard infiltrated margins are formed.

1 Syphiloderma maculosa, roseola s. erythema syphiliticum, the erythematous or macular syphilide, is the commonest general cutaneous manifestation of the dis-

ease, and is sometimes the only one. It appears from the third to the tenth week after the advent of the chancre, and, being unaccompanied by itching, pain, or desquamation, is often not noticed by the patient. It shows itself as lentil- to finger-nail-sized, non-elevated, and usually discrete spots; but sometimes the eruption is more or less confluent, giving rise to a general mottling of the integument. Its seat is on the trunk, and it is especially noticeable upon the back; the face nearly always escapes. Its color is at first pale rose red, and fades away completely under pressure; but later it assumes a darker hue, and yellowish-brown stains are left behind when it passes away. Occurring with it are usually the polyadenitis, the angina, the defluvium capillorum, and other early signs of the disease, together with the remains of the sclerosis. A later macular eruption, the roseola figurata or annulata, also occurs, in which the spots are larger and often arranged in crescentic or ring shapes. Circumscribed or confluent reddened areas occur on the mucosæ coincident with the roseola.

2. Syphiloderma papulosa, the papular syphilide, occurs with large and with small papules, forming two varieties of the exanthem sufficiently different to require separate descriptions. The large papular syphiloderm is a common form of specific eruption, appearing usually about three months after the infection; less frequently it is seen as a late or tertiary lesion. Often it immediately succeeds the roseola or occurs together with it, the papules developing in the



FIG. 98.—General papular syphiloderm.
From photograph by the author.



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SYPHILODERMA PAPULOSUM
PLATE XXIX

center of the macules, and rapidly increasing in size (syphiloderma maculo-papulosa). The fully developed papules are lentil- to pea-sized, or even larger, sharply limited, hard nodules, conical or flat, and with smooth, shining tops. Their color is a coppery red that does not disappear under pressure. In the early and commoner form a large number of them are scattered irregularly over the entire body, with some tendency to grouping in circles, or segments of circles, or curved lines. The face is especially apt to be affected, and a row of papules on the upper part of the forehead near the margin of the hair forms the commonest variety of the *corona veneris*. In the later forms the papules are comparatively few, and the tendency to circular grouping is more marked. The lesions come in irregular crops, so that papules in various stages of growth and retrogression are present at one and the same time. They increase slowly by peripheral growth, remaining stationary for weeks or months as fully developed papules; and then they gradually disappear by fatty degeneration and absorption, leaving behind atrophic spots, which at first are pigmented, and later become white.

Some scaling marks the process of involution, and this, when extensive, gives rise to the variety known as syphiloderma papulosquamosum. Here the papular lesions above described are covered with a greater or less amount of dry, grayish, partially adherent scales; and, as the central oldest portion of the papule undergoes involution and loses its scales while the peripheral portions are still advancing, we get a very characteristic collar of semi-detached scales at the margin of the infiltration. Adjacent papules may coalesce, forming more extensive infiltrated and scaly patches, especially in the later and more circumscribed forms, and closely resembling a psoriasis.

In certain localities the large papular syphiloderm differs greatly in appearance from the above-described typical form; this is notably the case on the palms and soles and around the muco-cutaneous orifices. Syphiloderma papulosum palmaris et plantaris is a very obstinate and chronic form of the malady; it occurs as an



FIG. 99.—Papular plantar syphiloderm.
From photograph by the author.

early lesion from four to six months after infection, and is also a common late manifestation. The early palmar syphiloderm appears as lentil-sized papules symmetrically distributed over both palms and soles, and of a reddish, coppery color; but, on account of the thickness of the corneous layer in these locations, the lesions are not perceptible to touch. Central scaling appears after a time, and this scaling extends to the periphery as involution begins in the oldest portion of the infiltration. Thus the fully developed eruption appears as isolated or confluent purplish-copper-colored macules, each surrounded by a margin of semi-detached scales. The



FIG. 100.—Condylomata lata.
From photograph by the author.

later form may occur many years after infection; it is very intractable and it may last a long time. Here the papules are usually fewer in number and arranged in a group; one palm or one sole only is generally affected. It appears as a rounded patch of varying size, with an atrophic center where the papules have already disappeared, and an inflammatory margin composed of a row of deep-seated papules with grayish-yellow, semi-detached scales. Fissuring of the skin is not uncommon from the pressure of the infiltration, and localized keratoses, hypertrophies of the epidermis, and papillary outgrowths also occur.

When the large papular syphiloderm occurs in the neighborhood of the mucous orifices, or in locations where folds of the skin are in juxtaposition, so that maceration of the papules with sebum and sweat occurs, as between the folds of the buttocks, around the genitals, in the

axillæ, the submammary regions, and between the toes, its lesions undergo a peculiar hypertrophic modification, and are known as condylomata lata. These may occur alone, or together with a general papular eruption; and the identity of the lesions is shown by the fact that when the condylomata are kept clean and dry they become ordinary papules. They appear as reddish flat or button-shaped outgrowths; they may be pea- or bean-sized when derived from a single lesion, or form larger cauliflower-like masses when formed by the coalescence of neighboring hypertrophied

papillæ. They are elastic to the touch, and have a smooth or papillary surface, usually covered with a grayish, very foul-smelling secretion. They generally occur symmetrically, the opposing layer of skin being directly irritated and infected. Superficial erosion is frequent, and the lesions may even undergo ulceration and lead to the formation of cicatrices; but they generally disappear by involution, a pigmented spot that subsequently becomes white being left behind. Condylomata lata usually occur during the first years after infection, but are very prone to relapse. Their secretion is very contagious.

On the mucous membranes themselves, or in localities of the skin where, from the approximation of its folds, the conditions as to heat and moisture resemble those of the mucosæ, the large papular syphiloderm appears as the mucous patch (*plaque muqueuse* [Fr.], *nässende Papel*, *Schleimpapel* [Ger.]). This is a very frequent lesion of syphilis, occurring early in the disease as well as in its later stages, and is especially common in women. The mucous patches are seen in the mouth and throat and upon the tongue, in the external auditory canal, the vagina, the anus, the preputial cavity, the scrotum, the interdigital spaces of the toes, the umbilicus, etc. They may be regarded as macerated and eroded papules, whose peculiar appearance is caused, as in the case of the hypertrophic papules known as condylomata, by local conditions. They appear as small pea- to finger-nail-sized areas of rounded outline, and are usually whitish or grayish in color, on account of the delicate transparent gray pellicle, composed of sodden epithelium and exudation, that covers the inflamed or eroded area. They are sometimes accompanied by fissures, and occasionally they are the seat of papillary or warty outgrowths. Mucous patches are exceedingly contagious, and are probably a much more frequent source of syphilis than the initial lesion itself.

The small papular or miliary papular syphiloderm is rarer than the large form; and occurring, as it usually does, in tubercular or otherwise debilitated subjects, it indicates the presence of a severe type of the disease and is usually of a bad prognosis. It is seen as a generalized eruption occurring early, three months or later after infection, or as a later more localized and grouped affection. The lesions are conical, millet-sized, coppery-brown papules, abundantly scattered over the body or grouped into irregular circular areas. It is especially prone to occur on the face and forehead, in which latter situation it forms one variety of the corona veneris. The papules in the course of time become scaly, but the amount of scaling is very much less than in the large papular form. After persisting for a varying time, involution by fatty degeneration occurs, and brownish spots with central atrophic depressions are left behind. The miliary papular syphiloderm is an obstinate eruption and very prone to recur.

3. Syphiloderma pustulosa is a rarer manifestation of acquired syphilis than the preceding forms, and, since it occurs in marasmic subjects, is of more serious prognosis. It may be pustular from the beginning, or it may develop from the papular

form after a brief vesicular stage, in which case it is probable that infection with pus-cocci is the factor that prevents the normal involution of the papule. The pustules vary much in size, number, course, depth of tissue invaded, and it has been customary to designate them by the names of the non-syphilitic lesions—acne, variola, impetigo, ecthyma, etc.—that they resemble. The early forms are more superficial, disseminated over the body, and often accompanied by constitutional symptoms,

fever, etc., while the later forms are grouped and more discrete, and lead to deeper destruction of tissue. We may distinguish a large and a small pustular syphiloderm.

The large pustular syphiloderm (ecthyma and rupia syphilitica) rarely occurs as a general eruption in acquired syphilis, being commoner in the later circumscribed and the hereditary forms of the disease. As a general exanthem it appears after the sixth month or later, beginning as an eruption of papules more or less thickly scattered over the back, shoulders, and extremities, and soon developing into small pea- to bean-sized flat pustules, surrounded by dark-red, sharply limited, infiltrated areolæ. The pustules soon rupture or dry up into dirty brown crusts, underneath which is a more or less deep, irregular ulceration; and they heal with the formation of a circular, depressed scar. The circumscribed



FIG. 101.—Pustular syphiloderm (negress).

From photograph by the author.

forms occur later, rarely before the end of the first year. Here the pustules are few, isolated, and large; and they dry up into thick greenish-brown or black crusts, under which are deep, irregular, steep-walled ulcerations, with dark-brown or more frankly inflammatory walls of infiltration around them. Still more circumscribed is the form known as rupia, which begins as large, flat, isolated pustules, which dry up into superficial crusts. The infiltration progresses at the margins as breaking down and suppuration extend from the center; new rings of suppuration are formed around and under the central crust, which in their turn dry up. Thus the older portions are gradually raised up by successive and more extensive layers of dried pus,



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SYPHILODERMA PUSTULOSUM

PLATE XXXIX

giving us the peculiar oyster-shell crusts resting on the pus-filled ulcerations, and surrounded by the red, infiltrated, advancing margins. Removal of the crusts reveals a deep, irregular loss of tissue, with a dirty, uneven base covered with an ichorous pus. This form of pustular syphiloderm may be very chronic, lasting for years; and if, as is frequently the case, it advances at one margin while healing at the other, it gives rise to the kidney-shaped serpiginous ulcerations that are so characteristic.

The small pustular or miliary pustular syphiloderm may be either acuminate or flat (acne, variola, and impetigo syphiliticum), the pustules being millet seed to split pea in size. Either variety may occur in an early generalized or a later more circumscribed form. As a general eruption the acuminate pustules begin as conical vesicles, the contents of which rapidly become purulent and dry up into minute crusts. A fringe or collaret of partially desquamated epithelium surrounds the crust, and it leaves a small deep scar behind when it falls off. It is especially prone to attack the hairy parts. In the small, flatter form the lesions are more numerous, especially upon the trunk and face; and as their outbreak is often accompanied by fever and general constitutional disturbance, it may be difficult to distinguish it from variola, especially in the colored races. I have seen case after case of this variety of luetic eruption sent to the hospital as cases of smallpox during an epidemic of that disease. The crusts eventually dry up, and the subjacent ulcerations result in the formation of superficial scars.

4. Syphiloderma tuberculosa is a rather rare form of skin syphilis, and corresponds in most respects, save as regards the size and number of the lesions, to the large papular eruption. It is essentially a late form, rarely occurring before the second year, and being often seen ten, twenty, or more years after infection. The lesions appear as rounded, firm, semiglobular or irregular elevations, dark or coppery red in color, with smooth, shining tops, and coffee-bean to large nut in size. Usually a few only are present, and there are never very many; they are generally closely aggregated, and show a marked tendency to assume a circular, semi-



FIG. 102.—General pustular syphiloderm (negro).

From photograph by the author.



FIG. 103.—Tuberculo-squamous syphiloderm.
From photograph by the author.

circular, or crescentic arrangement. They are generally confined to certain regions, and are commonest on the face and neck. Growth is very slow, but in the course of time the tubercle may reach the size of 2 inches or more; and, as it commonly spreads on one side only, it is very prone to assume the horseshoe or kidney shape. The lesions go on finally to fatty de-

generation and interstitial absorption, and leave pigmented scars or atrophic areas behind; or they break down and ulcerate, with or without the formation of rupial crusts. Their irregular mode of extension causes them to become serpiginous, spreading slowly in a definite direction over the skin; and this is the case with both the ulcerative and the non-ulcerative forms. Papillary out-growths from the ulcerated tubercles occasionally occur, giving us the form known as syphiloderma papillomatosa, with warty, cauliflower-like excrescences covered with an offensive, yellow, puriform discharge.

5. Syphiloderma gummatosum. The gumma or syphiloma is the commonest lesion of late syphilis, and occurs in the internal organs as well as on the skin. In the rare malignant cases it is multiple and occurs early; but more often one or a few only are present, appearing not before the third or fourth year after infection, and possibly ten, twenty, or more years thereafter. It appears as a various-sized, flat or rounded, globular or oval, indolent, painless



FIG. 104.—Hypertrophic tubercular syphiloderm.
Case of Professor Elsberg, Warsaw, Poland.

tumor, and is not usually accompanied by any constitutional disturbance. It grows slowly for weeks or months till it attains the size of a walnut or an egg. Then it begins to soften in the center, and the skin covering it becomes reddened and adherent, giving it a deceptive resemblance to a chronic abscess. Involution may be accomplished by interstitial absorption, with sinking and atrophy of the skin; but more commonly the thin covering of the tumor breaks, and a thick glairy fluid, more or less mixed with detritus and pus, is poured out, leaving a deep circular or irregular ulcer, with an uneven base covered with necrotic tissue and pus. This finally heals by granulation, cicatrization, and the formation of smooth, circular, white, and often adherent scars.

Two forms of gummata of the skin are to be distinguished—the superficial and the deep. The superficial variety usually



FIG. 105.—Superficial gummata.
Case of Professor Elsberg, Warsaw, Poland.



FIG. 106.—Exulcerated gumma of the knee.
From photograph by the author.

consists of circumscribed groups of pea- to hazelnut-sized tumors arranged in a crescentic or circular form. The infiltration often increases on one margin while involution, either by interstitial absorption or by ulceration, advances on the other, giving us the creeping or serpiginous form of gummatus infiltration of the skin. The deeper forms are larger, egg to orange size; I have met them 6 inches in diameter. There is usually a single tumor, or at most three or four; yet there are exceptions, and I have recorded a fatal case in which death from exhaustion occurred, and in which there were no less than sixty deep cutaneous gummata, most of them 2 or 3 inches, and some of them 6 inches in diameter.

Gangrene and phagedena sometimes occur, with deep and wide-spread destruction of tissue, so that the aponeuroses, muscles, and even the bones are laid bare. The exulcerated gumma

sometimes develops exuberant granulations, which form fungoid masses, the *frambœsia syphilitica*. Gummata also occur on the mucosæ, but cause little subjective trouble and have usually reached the ulcerative stage before their presence is detected.

6. *Syphiloderma ulcerosa* is not a distinct form of the disease, but occurs as the terminal stage in the papular, tubercular, pustular, and gummatous syphilodermata.



FIG. 107.—Gumma subcutanea.
From cast by the author.

The ulcers have certain characteristic features. Their margins are infiltrated, elevated, sharply limited, and dark red; their edges are undermined; and their bases are irregular, and covered with grayish-yellow fragments of necrotic tissue. Their shape is round, oval, or kidney-like, and they are often covered with thick, greenish-black, heaped-up (rupial) crusts. They leave thin, rounded scars, that are at first red and later white, and that are movable or adherent in accordance with the depth of tissue involved in the destructive process. Superficial ulcerations arise from papules, tubercles, or superficial gummata, and are round, reniform, or irregular in shape; deep ulceration, arising from the deeper cutaneous or the subcutaneous gummata, is irregular and crateriform.

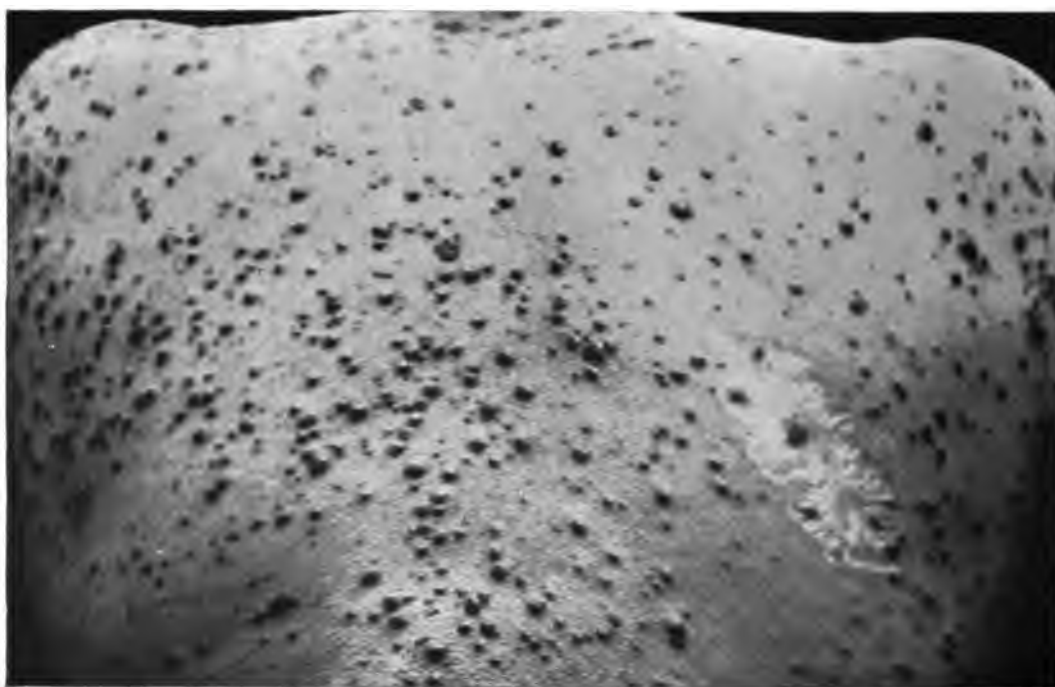
7. Syphilis of the hair and nails. The syphilitic virus may affect the nutrition of the nails, giving rise to various forms of onychia; or the inflammatory lesions characteristic of the disease may appear in or around the matrix, causing paronychia. In onychia, which is non-inflammatory, the nail loses its luster and becomes dry and brittle; furrows and

ridges appear on its surface; its free edge is thickened and filled with dirt; it breaks off irregularly, and portions of the nail itself may be cast off, leaving the nail-bed exposed. Or, again, the entire nail may become gradually detached and shed, a white line marking the point of division between it and the new nail that gradually grows up behind it. All the nails of the fingers and toes, or most of them, are usually involved. The affection occurs in the early stages of the disease, coincident with the other nutritive changes.

Paronychia syphilitica is an inflammatory lesion beginning in the tissues around the nail and gradually extending to its bed. Papules or pustules may appear as part of a general eruption, or as isolated lesions, at the margins of the nails. The papules may be visible through the nail as brownish-red spots, and the pustules may raise the entire nail from its bed and destroy the matrix. Around the margins of



SYPHILODERMA PAPULOSUM.



TYPOGRAVURE.

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SYPHILODERMA PUSTULOSUM.

PLATE XXVII.

the nail the inflammatory process may be chronic and manifest itself as a hypertrophy and exfoliation of the epidermic scales; but, in my experience, it is much more commonly frankly inflammatory. The papules at the margins of the nail and in the groove coalesce, and a rounded or oval dusky-red swelling is formed. Ulceration not infrequently occurs in severe types of the disease; fungous granulations spring up and cover the edge of the nail; and a fetid pus exudes from the mass. The nail becomes discolored and loosened, and is finally cast off; and the nail-bed, destroyed wholly or in part, is replaced by cicatricial tissue. In bad cases the skin of the entire phalanx is involved in the inflammatory process. Gummatous infiltration of the matrix, with subsequent ulceration, also occurs. Paronychia is commonest in the early secondary stage of the syphilitic disease, but it may occur at any time; gumma of the nail is a late lesion.

The hirsute appendages of the skin suffer more commonly than do the nails from the effects of the syphilitic poison, and alopecia syphilitica is a fairly constant symptom of the disease. From four to five months after infection, and later, the hair becomes dry and lusterless, and the diffuse falling out, giving the head a characteristic moth-eaten appearance, occurs. This is sometimes accompanied by a dry seborrhea, but more commonly there are no inflammatory symptoms whatsoever. The alopecia is very rarely complete; and the hair usually, though not always, grows in again as the poison of the disease becomes less virulent under the influence of time and treatment. In rare cases the hair of the axillæ, eyebrows, beard, etc., also falls out. In the later stages of the disease a permanent alopecia may occur in consequence of atrophic or ulcerative changes in the scalp after papular, tubercular, or gummatous lesions of that portion of the body.

8. Hereditary syphilis. In hereditary syphilis the fetus is infected in utero by one or both parents; and the disease thus acquired differs in some respects from



FIG. 108.—Ulcerative syphiloderm.
Case of Dr. H. Roth.

the more ordinary variety. The initial sclerosis is absent, and the regular order of the phenomena, so marked in most cases of the acquired variety, is entirely lost.



FIG. 109. — Paronychia syphilitica.
From photograph by the author.

The so-called secondary and tertiary lesions may occur together, or the latter alone may be present; gummata may appear in utero or at birth, and irritative lesions later on. The virulence of the disease depends on the age of the parental infection and the thoroughness of the treatment that has been employed. In the worst cases the fetus dies in utero, and abortion results. In others a living child, small, ill developed, with wrinkled skin, a characteristic "old-man" appearance, and showing one of the eruptions to be described below, is born. Coryza ("snuffles") appears; the voice is hoarse and squeaky; the skin of the palms and soles is red and shining; marasmus

soon sets in; and the child dies of diarrhea or visceral complications. Again, the child may be born apparently perfectly healthy, but soon becomes weak and sickly, and the symptoms above enumerated, with a characteristic eruption, appear. The survival of the child depends largely on the vigor and appropriateness of the treatment that is instituted. Finally, in some cases the children present no symptoms of active syphilis at first, but show in the course of time the well-known Hutchinsonian triad of signs: the interstitial keratitis, the purulent otitis, and the notched and peg-top-shaped incisor teeth. Epiphysitis, dacrylitis, and other bone and visceral lesions occur later, with serpiginous ulcerative or rupial skin lesions. This last form, in which so-called tertiary lesions occur later in life without the appearance of the earlier ones, is the syphilis hereditaria tarda, and can with difficulty be distinguished from the acquired form of the disease. Wolff has recorded a case occurring at the age of thirty-four years, and still later ones have been noted.

The skin eruptions of the hereditary luetic disease



FIG. 110. — Alopecia syphilitica.
After Lesser.

are similar in a general way to those of the acquired variety. They appear in almost all cases within three months of birth, and are rare after the sixth month. They may be erythematous, papular, pustular, or gummato-ulcerative in character. The erythematous hereditary syphiloderm is rather uncommon, appearing in the first days of extra-uterine life. The face, especially around the mouth, the sides of the abdomen, and the palms and soles are reddened diffusely or in spots. The exanthem is sometimes a precursor of other forms of eruption. The papular hereditary syphiloderm is by far the commonest form of the disease. It appears as large, red or copper-colored, slightly elevated, shiny papules; at the folds of the skin they sometimes become hypertrophic (*condylomata lata*), but they are more liable in the delicate infantile skin to become eroded; on the mucous membranes they appear as mucous patches; on the palms and soles the eruption is often slightly scaly. The pustular form of the hereditary syphiloderm is known as *pemphigus syphiliticus neonatorum*, and, while commoner than the same form in the acquired variety of the disease, is much rarer than the papular eruption. It appears at birth or a few days after, and is most marked on the palms and soles; the lower extremities are frequently affected, but the face and trunk are seldom involved. The bullæ are flat, pea to hazelnut in size, with contents of clear fluid or cloudy or greenish pus. Destruction of the derma occurs underneath, and scars result if the child survives. *Syphiloderma hereditaria gummatosa-ulcerosa* is rare, and usually appears three months or more after birth; softening and ulceration almost invariably occur.

Onychia occurs in the hereditary disease both as a nutritive change and as an inflammation of the matrix. Alopecia is also seen, similar to that of the acquired form.

Pathology.—Though the various dermal lesions of syphilis differ greatly from one another in external appearance, they are essentially alike in their microscopic structure. They are all granulomatous tumors, caused by the presence and growth in the tissues of an infective agent as yet unknown. Even in its macular form the microscope shows that the syphiloma consists of a dense, sharply limited infiltration of indeterminate small round cells, situated in the upper corium and papillary bodies in the earlier, and in the lower corium and subcutis in the later lesions. Around these masses are the results of inflammation, evidences of suppuration, caseation, fatty degeneration, etc. It is characteristic of these tumors that they are never capable of higher organization, but always undergo fatty degeneration and absorption, or ulcerative disintegration, or suppuration. In these retrograde changes the normal elements of the tissue invaded are also destroyed, and hence arise the atrophies and cicatrices that are characteristic of the disease. The changes are always centrifugal, so that the peripheral portion of a lesion or of a series of lesions is a recently formed and growing infiltration, while the central and older portions are already far advanced in the retrogressive changes. Endarteritis is a common accompaniment of the process and explains many of its features. In the hypertrophic form

of the syphiloma known as the condyloma there is considerable growth of the papilla itself in addition to the granulomatous infiltration; and the gumma is a granuloma with a network of connective-tissue fibers ramifying through the mass.



FIG. 111.—Multiple gummata.
From photograph of one of the author's patients.

Etiology.—The syphilodermata are caused by a virus that enters the system through an abrasion of the skin or mucosæ in the acquired form, and that is transmitted through the blood in the hereditary variety of the disease. This inoculation, after leading to local inflammatory changes already considered under the heading of chancre, passes through the lymphatics and causes inflammation of first the neighboring and then the more distant lymphatic glands; and finally, reaching the blood, causes the phenomena of the general disease, the symptoms of which appear on the skin and mucosæ and in the internal organs. That the agent is organic in its nature is probable from the fact that this has been proved to be the case in many of the chronic infective granulomata—tuberculosis, leprosy, glanders, etc.—most closely related to syphilis in their pathological and clinical features; and still more so because upon no other supposition can its enormous increase in quantity in the infected individual during the course of the disease be explained. Positive proof in this respect has so far been unattainable; the various microorganisms found by Lustgarten, Doutrelepon, and others have not been seen by all observers, and both culture experiments and inoculations upon the lower animals have entirely failed.

All the phenomena of the disease are explainable on the supposition that it is due to the presence of a microorganism and its toxins in the blood and the tissues. The chancre and the secondary eruptions are the direct product of the microbe, either alone or plus its toxins, while the tertiary lesions are due to the toxins deposited in



SYPHILODERMA MACULOSUM.



SYPHILODERMA GUMMATOSUM.



TYPOGRAVURE.

GLOSSITIS SYPHILITICA.



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SYPHILODERMA PAPULOSUM.

the tissues and roused into activity by various causes; and the immunity from reinfection is due to the presence of the toxins in the blood. The resisting power of the organism plays an important part in the growth of the virus; tubercular and malarial subjects have severe forms of syphilis; and parts irritated or inflamed from any cause are more prone to show the lesions of the disease than are others. Secondary infection with pyogenic organisms plays an important part in many manifestations, more especially of the hereditary form.

Not all the varieties of syphilis contain the virus in an active form, and from some lesions the disease cannot be produced in healthy individuals. In a general way all the moist and discharging lesions, both of the acquired and the hereditary form, are contagious; the sclerosis, the secondary papules and mucous patches, and the condylomata being eminently so. The blood-serum is not contagious, but the blood-corpuscles contain the virus. The physiological secretions—the milk, saliva, tears, etc.—cannot carry the contagion, save when contaminated with blood-globules or the detritus of lesions; and the same is true of ordinary pathological secretions. The lesions of tertiary syphilis do not contain the virus, but only its products, and are not contagious.

The modes of transmission of the virus are extremely various. It can be gotten by direct contact, as in intercourse, kissing, vaginal examination, etc.; or by mediate infection, the virus being deposited on some article, and then conveyed to the body of the recipient, as on a lead-pencil, tooth-brush, dental instrument, etc.; or it can be transmitted with the semen or ovum to the fetus. In all cases but the latter a lesion of the skin or mucosa, however minute, is required to permit the virus to enter the system of the recipient.

Diagnosis.—The protean lesions of the syphilodermata are often with difficulty distinguishable from those caused by other diseases; and this has led to the use of such inapplicable terms as *acne syphilitica*, *pemphigus syphilitica*, *varicella syphilitica*, etc. No single set of differentiations is, however, of greater importance in the whole field of medicine, since it is but too often not merely a question of accurate diagnosis and correct treatment, but one which involves the happiness, mental quietude, and domestic peace of many human beings. A discreet reticence should always be observed in the statements made to our patients, whatever our convictions as to the nature of the disease may be; and concealment is in many cases an imperative duty. Nevertheless, our paramount concern is the cure of the disease, and if a plain statement of facts is necessary for that purpose, other considerations must be subordinated to it.

Certain general considerations are in place before considering the diagnosis of the various syphilodermata in detail. First and foremost, the patient's history is not only useless, but is positively misleading. Forgetfulness and inattention to the often trivial early manifestations of the disease, combined with the very natural disposition to deny the facts, deprive it of all reliability. It should be inquired into, if

at all, only after the diagnosis has been made from the objective symptoms. Secondly, in some doubtful cases we can employ the touchstone of treatment. Our means for the cure of syphilitic manifestations are so powerful and certain that the mere fact that a lesion is refractory to the ordinary treatment of the disease is *prima facie* evidence against its luetic nature. But the treatment must be vigorous and the dosage large, for many of the lesions, more especially of late syphilis, react only to energetic measures. Finally, the syphilodermata have certain general characteristics (p. 191); and a circular or crescentic arrangement, a copper-color, secondary ulceration or heaped-up crusts, the absence of subjective symptoms and the presence of characteristic symptoms or lesions elsewhere, of adenopathy, angina, cephalalgia, alopecia, osteocopic pains, or the remains of the sclerosis, will often help us to reach a definite conclusion.

Syphiloderma maculosa may be faintly marked, and is doubtless often overlooked; but it is not difficult to diagnose. The non-scaling, non-elevated, discrete spots, situated chiefly upon the trunk, are quite characteristic. Urticarias, and more especially the roseolous eruptions that sometimes follow the ingestion of drugs like copaiba, cubebs, quinine, etc. (roseola balsamica), have more or less well-marked wheals and itch greatly. The eruptive fevers, and more especially measles, may resemble it; but the presence of the symptoms on the mucous membranes, together with the fever, will distinguish them. The eruption of typhoid fever consists usually of but a few spots, and is accompanied by the characteristic temperature curve. In erythema multiforme the spots are elevated, and are especially apt to appear on the backs of the hands and the flexor surfaces of the limbs. It would seem impossible to confound trichophytosis corporis, pityriasis rosea, or chromophytosis with the roseola of syphilis; the discrete spots with fading centers and scaly margins of the first two, and the diffuse or circumscribed brownish discolorations of the third, should suffice to prevent error without resort to the microscope. The marbling of the skin apparent in some individuals when the body is exposed to cold air fades away as soon as the integument is warmed.

The papular syphiloderm, large and small, may resemble a psoriasis very closely, both in appearance and in distribution. But the papules of syphilis are dark-red, dense infiltrations, and the scaling is central, and consists of dirty cast-off epithelium. In psoriasis the scales are shining, abundant, heaped up, and seated on bright-red non-infiltrated areas; scraping shows the bleeding points of the hypertrophied papillæ, and the seat of the lesions is mostly upon the extensor surfaces of the limbs. Acne is situated mostly upon the face, and is accompanied by comedones; its papules are short-lived, bright-red, acuminate, and often become pustules. In eczema the papules are not sharply limited and not infiltrated, and other forms of the disease, marked by moisture, vesiculation, crusting, and itching, are almost always present at the same time. The lesions of scrofuloderma are small, livid, red or skin-colored papules occurring in childhood in groups on the trunk and the ex-

tensor surfaces of the limbs, are very chronic, and are usually accompanied by glandular swellings, mucous discharges, etc.

On the palms and soles the papulo-squamous syphiloderm must be differentiated from eczema. This may be difficult; but careful observation will reveal the dusky-red, infiltrated papules with semi-detached scales at their margins, and arranged often in groups, or a larger discolored area with a coppery, infiltrated wall. Eczema has no papules, and is more irregular; the epidermis is thickened and cracked near the fingers; itching is present; and weeping or crusted surfaces extend into the clefts of the fingers or on to the surrounding skin. Psoriasis is almost unknown upon the palms and soles, and occurs as a diffuse scaling without infiltration; and other distinctly psoriatic lesions will be found at the seats of election of that disease. The hypertrophic moist papule must be distinguished from the acuminate or simple condyloma. These latter are caused by the irritation of gonorrheal, chancroidal, or other discharges, and are distinctly warty, fissured, and pedunculated; while the syphilitic lesions are broad, mushroom-like growths, and are almost always accompanied by the correlative forms of the efflorescence, dry papules or mucous patches.

The pustular syphiloderm consists of more or less regularly grouped papules seated on infiltrated bases. It may resemble a variola so closely that an immediate diagnosis is impossible. There are the same stages,—papules, vesicles, and pustules,—followed by scarring; and high fever and marked general symptoms are sometimes present. The rapid and definite course of the smallpox lesion to its termination in eight to twelve days finally removes all doubt. In pustular acne we have the seat of the disease on the face and back, the absence of fever and other acute symptoms, and the presence of small acuminate papulo-pustules, situated on inflammatory bases, in various stages of development. In impetigo contagiosa there are flat pustules, drying up into yellow crusts, under which is a moist, non-infiltrated surface; the disease occurs mostly in children.

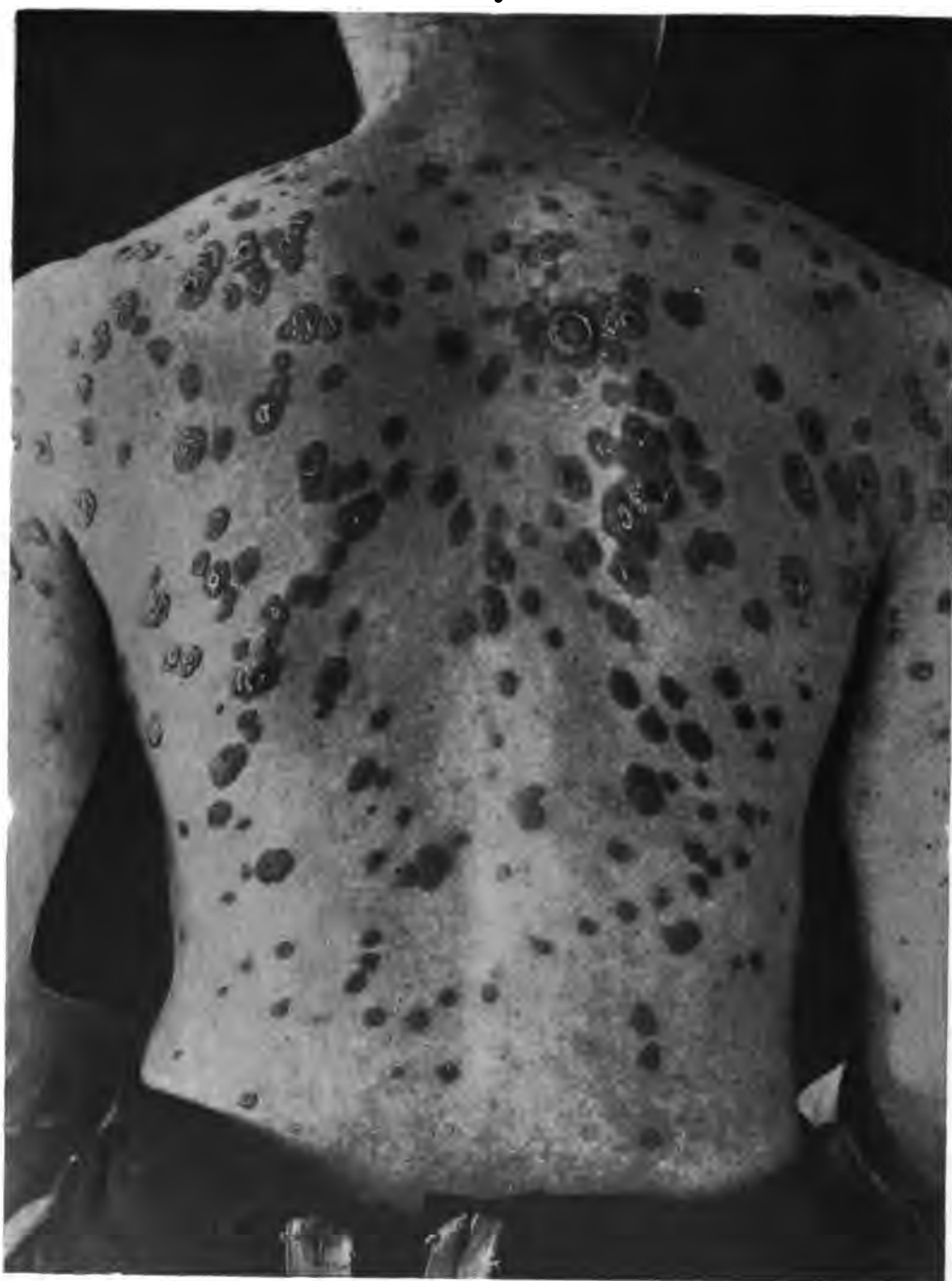
The tubercular syphiloderm may resemble lupus vulgaris, leprosy, epithelioma, or psoriasis. In lupus the numerous small, soft, deep-seated, apple-jelly-like nodules, appearing in early life and progressing very slowly, are peculiar. Leprosy has its characteristic history: the tubercles are large and form enormous nodular, varnished-looking masses, growing very slowly; and anesthetic areas are almost always present. Epithelioma usually develops from a wart, is most often single, occurs in the aged, and has prominent, hard, waxy edges with minute blood-vessels running over them. Finally, in a psoriasis, though it may closely resemble a tuberculo-squamous syphiloderm, the lesions are pinkish, abundantly covered with silvery scales, and there is never any loss of tissue.

The gummatous syphiloderm is sometimes easily recognized, being present as a single one or only a few tumors; it is hard, of large size, and sharply limited, elevated, and coppery or ham-colored; or appears as a kidney-shaped ulceration with hard, infiltrated, coppery margins. Its distinction from certain non-luetic affections

of the skin, more especially from certain tumors, is sometimes very difficult. So far as the non-ulcerated gumma is concerned, fibroma is harder and denser, and lipoma softer; and in both the continued absence of inflammatory symptoms will in time elucidate the diagnosis. Rhinoscleroma is marked by its location, its excessive and cartilaginous hardness, the extreme chronicity of its course, and the very rare occurrence of ulceration. In sarcoma the tumors are numerous and pigmented, the cachexia that sets in is characteristic, and the general health is markedly involved. The softened gumma has often been mistaken for an abscess; it may be distinguished from it by the chronicity of its course, and the absence of pain and active inflammatory symptoms.

The exulcerated gumma may resemble a lupus so closely that a special term, lupus syphiliticus, is employed by some writers to designate this variety of the luetic disease. Lupus, however, begins in childhood or in youth; its nodules are small, numerous, yellowish brown in color, non-elevated, and soft, and their growth is very slow. If breaking down has occurred, the ulcers are elevated and filled with hypertrophic, easily bleeding granulations; there is no continuous infiltrated margin; characteristic papules are seen outside the ulceration, and also in the old scar tissue already traversed by the disease; and only exceptionally are the cartilages and bones involved. The ulcerative scrofuloderm may also be mistaken for a gumma; but its edges are less hard, non-infiltrated, and lax and undermined; and the ulceration is most apt to occur on the neck and in children who exhibit evidences of disease of the lymphatic glands and the bones. In carcinoma, more especially in its epitheliomatous form, the ulcer has a red, easily bleeding base; its margins are hard and waxy; it grows very slowly; and it is accompanied later by involvement of the lymphatic glands. Lupus erythematosus is a superficial inflammation with slightly elevated edges; ulceration never occurs, and the scar is soft and superficial. Gumma of the genitals has been mistaken for a chancre, but the absence of the characteristic hardness, the non-appearance of secondary symptoms, and the presence of evidences of past luetic disease should prevent mistake.

The ulceration of syphilis requires to be differentiated from that which accompanies other dermal affections, and more especially the common ones, lupus and simple dermatitis. It can be done with readiness if the nature of the syphilitic process is borne in mind. The specific ulceration always arises from the breaking down of the characteristic infiltration, which is a sharply limited, densely packed collection of small round cells in the corium. Each ulcer commences in the center of a papule, tubercle, or gumma, and spreads by peripheral extension of the infiltration with central extension of the breaking down. A sharply limited and dense zone of infiltration therefore surrounds each such loss of tissue, the skin around it being entirely unaffected. The ulcer of dermatitis is more frankly inflammatory, and lacks the infiltrated wall around it; it is shallower, has redder, softer, and more sloping edges, its margins are not sharply limited, and an extensive area of inflamed



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SYPHILODERMA TUBERCULO-ULCEROSUM.

PLATE XXVIII.

skin surrounds it. The ulceration of lupus is extremely slow, begins in youth, is often covered with hypertrophic granulations, and shows at its margins the characteristic nodules of the disease.

Prognosis.—The prognosis of the syphilodermata in general is good, though some are more resistant to antiluetic treatment than others. The macular are the easiest, and the pustular and ulcerative the most difficult, forms to cure. The general condition of the patient is of great importance, the prospects of cure being worse in broken-down, intemperate individuals, and in those debilitated by chronic or acute disease. The early appearance of late forms of gummatous lesions is of bad prognosis, as is also the rapid occurrence of relapses of the dermic lesions. The ulcerative and gummatous syphilodermata may themselves, if very extensive, determine a fatal ending to the disease. In hereditary syphilis the prognosis is doubtful. In all cases thorough and appropriate treatment is an important element in determining the result.

Treatment.—The treatment of the syphilodermata is that of constitutional syphilis, together with certain local measures. The systemic poison is in all cases the same, and the severity of its manifestations depends on the condition of the patient and the treatment to which he is subjected. Care of the general health is therefore of the utmost importance, and tonics, nourishing food, fresh air, bathing, exercise, and travel should be judiciously employed, so as to place the patient in the condition most favorable to resist the ravages of the disease. Special attention should be paid to the hygiene of the skin, since that is the organ most frequently attacked. The mucosæ are hardly less liable to be involved; and that of the buccal cavity is not only a frequent seat of characteristic lesions of the disease, but is of especial importance, because it is also liable to be injured by the drugs that are required in the treatment. In every case of syphilis, therefore, even before treatment is begun, the mouth should be carefully examined and all defects remedied; the teeth should be put in good order, and an antiseptic mouth wash (No. 96, p. 209) should be regularly employed. If the gums are at all inflamed or spongy, an astringent lotion (No. 97, p. 209) may be used several times a day.

No. 96. Antiseptic Mouth Wash.

R̄ Acid. carbolic. 1 part
Spts. vini
Aquæ destil. āā. 50 parts

No. 97. Astringent Mouth Wash.

R̄ Acid. tannic. 1 part
Glycerini
Aquæ destil. āā. 10 parts

Mercury and iodine are the two drugs most useful in the treatment of the syphilodermata. Mercury is an antidote to the specific poison, and is of benefit in almost all the stages of the disease. Iodine causes the disappearance of the gummatous accumulations, but does not prevent their formation; it is therefore most efficient for the later lesions. The treatment with mercury is to be commenced as soon

as the diagnosis of syphilis is made. This, as we have already seen, cannot be done from the initial lesion alone, and premature treatment may prevent the appearance of the secondary symptoms, and leave us forever in doubt as to whether infection has taken place. The appearance of the general adenopathy, the angina, or the eruption is the signal that we must await. The dose of mercury then given should be as large a one as the patient can bear without the occurrence of salivation or gastro-intestinal disturbance. With the retrocession of the symptoms it may be diminished, and the patient should be kept steadily on the smaller dose for a number of months. The reappearance of active symptoms on the skin and elsewhere is the signal for pushing the medication; and even if that does not occur, two or three courses of active medication should be given during each of the first two or three years of the disease. During the second year, when the dermic symptoms become more localized, the iodine preparations, together with the mercury, give us the best results. After that, in the stage of the late lesions of which the gumma is the type, iodine is still more efficacious and must be given in larger dose; but mercury in small amounts is always useful, and sometimes indispensable, to effect a cure.

No. 98. Protiodide Pill.

R̄ Hg. iodid. virid. ℥i
 Pulv. opii gr. 10
 Extr. gent. q. s.
 F. pil. No. 60.

No. 99. Mixed Treatment.

R̄ Hg. chlor. corr. gr. 1
 Kali iodidi ʒss
 Syrp. zingiber ʒi
 Aquæ ad. ʒii
 Dose ʒi

No. 100. Calomel Powders.

R̄ Calomelani gr. 1
 Sacch. alb. ʒss
 Div. in pulv. No. 10.

No. 101. Oleate of Mercury Ointment.

R̄ Ol. hydrarg., 20-per-cent. solu-
 tion 1 part
 Petrolati 2 parts

The most convenient method for the administration of mercury (see p. 48) is undoubtedly by the mouth, and it is the one preferred by most practitioners. It is slow, however, and uncertain, since we cannot know what proportion of the drug is absorbed by the digestive tract; and it is liable to cause salivation and gastro-intestinal irritation. The protiodide is the most commonly used preparation, and it should be given in $\frac{1}{2}$ - to 1-grain doses, in accordance with its effect. The griping and diarrhea that it sometimes occasions may be obviated by combining a small dose of opium with it (No. 98, p. 210). The biniodide and bichloride are both irritating, and are most frequently used in combination with the iodide of potash in the so-called "mixed treatment" suitable to the late secondary stages of the disease (No. 99, p. 210). The tannate is less irritating than most other preparations of the drug, but it is less effective than the protiodide and must be given in larger doses.



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GUMMA SUBCUTANEUM

PLATE XXX

Calomel is especially efficacious in the hereditary and acquired syphilis of children ; it may be given in powder (No. 100, p. 210), or as tablets in doses of $\frac{1}{10}$ of a grain two to four times daily, or in the form of half-grain doses of gray powder.

The percutaneous or inunction method of mercurial medication is a favorite one with many syphilographers ; it is efficient and rapid enough to be preferred to ingestion when destructive processes are in progress or important organs are threatened ; by its use the gastro-intestinal tract is entirely spared. It is troublesome and dirty ; patients object to it ; and it is very liable to cause eczematous eruptions in sensitive skins. Mercurial ointment is the favorite preparation ; $\frac{1}{2}$ to 1 dram should be thoroughly rubbed for fifteen minutes every night on a different part of the body, so as to allow as long an interval as possible to elapse before returning to the part first rubbed. The loins, insides of the thighs, etc., should be selected ; hairy parts must be avoided, as a troublesome folliculitis is liable to occur, and the method cannot be employed in very hirsute individuals. Mercurial soap is cleaner than the ointment, and may be used in the same way ; but the commercial preparations are not very reliable, and it is not so efficient. The oleate of mercury is an eligible preparation for inunction (No. 102, p. 212).

Mercurial plaster applied to the trunk and extremities, and allowed to remain in situ for several days, is useful, especially in children. Absorption is rapid in the infantile skin, and there is no better way of treating hereditary syphilis than by mercurial ointment reduced by 2 or 3 parts of an excipient. A bean-sized piece should be rubbed into the skin of the abdomen daily, and a small additional quantity spread upon a cloth and placed next to the skin under the child's belly-band if a rapid effect is desired. In the same class of cases the sublimate baths are useful ; they must be given in a wooden wash-tub, 5 to 30 grains being used to the contents of one of ordinary size. Adults can take from 75 to 150 grains to the bath ; the patients should remain immersed therein for from twenty minutes to an hour.

The method that I prefer, however, for the introduction of mercury into the system when prompt and vigorous action is required, is that by subcutaneous or rather intramuscular injection. Its disadvantages are a moderate amount of pain and disability ; its advantages are cleanliness, exactitude in dosage, rapidity and efficiency, and, above all, it necessarily keeps the patient under the care and guidance of the physician. The painful infiltrations and abscesses formerly noticed are very rare when antiseptic precautions are employed, and I have never seen the serious results therefrom that have been recorded. The skin at the site of the injection is scrubbed with soap and water, and with 1 : 1000 corrosive chloride solution, and then with ether. The needle is kept in carbolized oil, and is passed through the flame immediately before the puncture ; and this latter is closed with rubber plaster immediately upon the withdrawal of the instrument. The injection should be made deep into the muscles of the buttock or back, a needle somewhat longer and coarser than the ordinary hypodermic one being employed.

Either the insoluble salts first used by Scarenzio in 1864, or the soluble ones introduced by Lewin in 1867, may be employed. The soluble salts act most quickly, but only a small quantity can be introduced at a time, and the injections must be repeated daily or every other day. The most commonly used is the sublimate (No. 102, p. 212) in 1-per-cent. solution, of which 10 minims may be injected at a dose. Twenty to thirty such injections form a course, according to the necessities of the case. The albuminate, peptonate, and many other soluble preparations have been recommended, but they do not seem to possess any advantages over the corrosive chloride.

The insoluble salts cause moderate pain; deep infiltrations sometimes occur, but abscess formation is rare. The injection needs to be repeated only once in five to fourteen days, the mercurial deposited in the tissues being slowly transformed into a soluble salt and absorbed. Eight to ten injections form the usual course. Calomel in 10-per-cent. suspension in liquid vaseline (No. 9, p. 46) is most often employed, the dose being from 3 to 10 minims. The salicylate of mercury may be used in the same way (No. 103, p. 212); it is less painful than calomel, and less liable to salivate. The so-called gray oil, highly recommended by Lang, is a form of mercury in oily suspension (No. 104, p. 212), and should be slightly warmed before using.

No. 102. Sublimate Injection.

℞ Hydrarg. chlor. corr. . . . 1 part
Sod. chlorid. . . . 10 parts
Aq. destil. . . . 100 "

No. 103. Salicylate-of-mercury Suspension.

℞ Hydrarg. salicyl. . . . 1 part
Petrol. liquid. . . . 10 parts

No. 104. Gray Oil.

℞ Hydrargyri
Adip. lanæ 3 parts
Petrol. liquid. 4 "

In the ordinary syphilodermata, which may be regarded as part of the regular symptomatology of the disease, internal treatment is the easiest and is perhaps sufficiently reliable. But in obstinate cases, and especially where the irritability of the gastro-intestinal tract is too great to allow a sufficient quantity of the remedy to be absorbed, inunctions are to be preferred. Where the skin lesions are obstinate, numerous, and deep-seated, in the late ulcerative processes, and in cases where a differential diagnosis between syphilis and malignant or tubercular disease must be speedily made, the hypodermatic method of administration should be employed.

While mercury is no longer given in the doses that were once customary, and salivation is not now a necessary accompaniment of the treatment, the drug must frequently be pushed to the point of toleration, and slight stomatitis, swelling of the gums, and salivary flow are sometimes developed. The more serious forms of mer-



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RUPIA SYPHILITICA
PLATE XXXI

curial poisoning, with diarrheal and bloody discharges from the bowels, and albuminuria, are very rarely seen to-day.

Iodine is, next to mercury, our main reliance in the treatment of the syphilodermata, more especially in the later forms. The iodides of potassium and sodium are most commonly used; the latter salt, being less of an irritant and cardiac depressant, can sometimes be employed when the former cannot. Being deliquescent, they are best prescribed in a saturated solution (No. 105, p. 213), and should invariably be taken in a considerable quantity of milk or water after eating. In the late secondary and early tertiary lesions they are often given in combination with mercury (No. 99, p. 210); but it is best to give them separately, as the relative doses can be more conveniently changed. The ordinary amount is from 15 to 60 grains three times a day, but the only limit to the dose administered is the tolerance of the patient and the effect on the disease. Ordinary quantities are frequently inefficient, especially in the very late lesions; and 500 grains or more daily must be administered in some cases. The rectum may be called upon for assistance when the stomach rebels, and the iodide in solution, and well diluted with water and milk, is almost as efficient when given in this way as when administered by the mouth.

No. 105. Iodide-of-potash Solution.

℞ Kali s. nat. iodidi
Aq. dest. āā. 1 part

No. 106. Iodoform Pills.

℞ Iodoformi
Extract. glycyrrhizæ . . . āā. p. e.

No. 107. Iodine Mixture.

℞ Tra. iodinii 1 part
Aq. dest. 100 parts

No. 108. Syrup of the Iodide of Iron.

℞ Syrp. ferri iodidi . . . 1 part
Syrp. simplicis 2 parts

Iodoform is sometimes employed with good effect in 2-grain pills (No. 106, p. 213), as also 2 to 3 drop doses of the tincture of iodine in solution (No. 107, p. 213). In debilitated and anemic cases, more especially of children, the syrup of the iodide of iron is appropriate (No. 108, p. 213).

Like mercury, iodine sometimes causes constitutional disturbance, and it is therefore desirable to begin with a small dose and increase it gradually. The symptoms of iodism are coryza, catarrh of the pharyngeal and laryngeal tracts, gastritis, headache, redness of the face, and more especially acneform, furuncular, and nodular eruptions of the skin.

Local treatment of the syphilodermata is not necessary when the symptoms are not extensive or threatening, but it is a powerful adjuvant to the internal method. When the general eruptions are situated on the skin of the face or hands, they are best treated by rubbing in the white precipitate ointment, either alone or with a small proportion of mercurial ointment, at night (No. 109, p. 214). In bad cases the

mercurial ointment or plaster, or the mercurial plaster-mull, may be applied to limited areas during the night.

No. 109. Compound Mercurial Ointment.

℞ Ungt. hydrarg. ammon.
Ungt. hydrarg. aa. 1 part

No. 110. Mercurial Ointment and Powder.

℞ Hydrarg. soziodol. 1 part
Amyli s. petrolati 20 parts

No. 111. Black Wash.

℞ Calomel. 1 part
Aq. calcis ad. 100 parts

No. 112. Sublimate Gargle.

℞ Hydrarg. bichloridi 1 part
Mel. ros. 1000 parts
Aquæ 4000 "

No. 113. Permanganate Gargle.

℞ Kali permangan. 1 part
Aquæ 2500 parts

The condylomata lata or moist papules should be first thoroughly cleansed with a 1 : 1000 sublimate solution ; or, if situated on the genitals, immersed in the sublimate sitz-bath (p. 211). They should then be washed with a saline solution and well sprinkled with calomel. The mercurial collemplastrum may be used in some cases. If the growths are very exuberant, they may be cautiously touched with a 5- to 10-per-cent. sublimate alcohol, or nitric acid, or the acid nitrate of mercury, or pure carbohc acid ; but this will rarely be necessary.

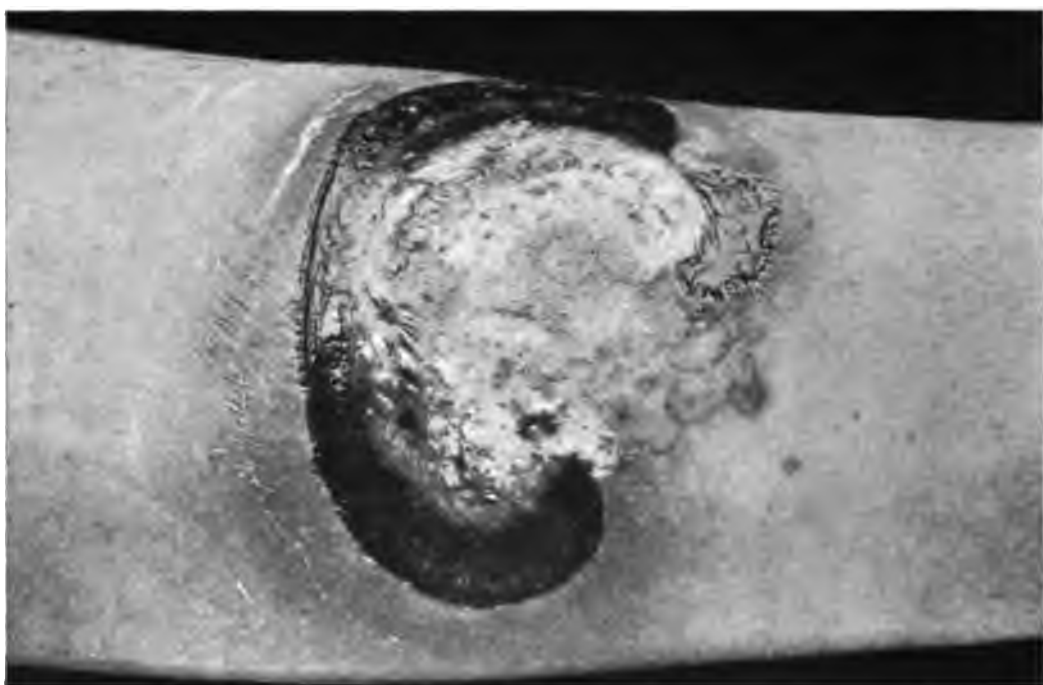
The palmar and plantar syphiloderms should be treated with local sublimate baths, followed by mercurial plaster.

In the ulcerative affections, if there is not too much secretion, the mercurial plaster or collemplastrum or plaster-mull is very efficacious. Where there is crusting and suppuration, the crusts are to be removed by soaking with olive-oil or poulticing, the parts thoroughly cleansed, the ulcerated areas sprinkled with iodoform and covered with mercurial plaster. The soziodolate of mercury in 5-per-cent. powder or ointment (No. 110, p. 214) may be advantageously employed instead of the iodoform.

If the alopecia syphilitica requires treatment, frictions of 1 : 1000 sublimate solution or of the ointment of ammoniated mercury may be employed.

Paronychia and onychia are best treated with local sublimate baths, the affected parts being then carefully covered with mercurial plaster.

For the mucous patches a 1 : 10000 or 5000 sublimate gargle (No. 112, p. 214) is useful, as is also the black wash (No. 111, p. 214). If they are very extensive, they may be sprayed once a day by the physician with a $\frac{1}{2}$ -per-cent. sublimate ether, or touched with the nitrate-of-silver stick.



SYPHILODERMA ULCEROSUM.



TYPOGRAVURE.

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CATHODE RAY DERMATITIS.

PLATE XX.

Gummata are never to be opened, no matter how marked the fluctuation may be; resorption without the formation of scar tissue may occur even under these circumstances. They should be kept covered with the collempastrum or plaster-mull or the simple mercurial plaster. When ulceration has occurred, the treatment must consist in cleansing, sprinkling with iodoform, and covering with mercurial plaster. When the destructive process is rapid it is sometimes necessary to destroy the infiltrated advancing margin; this may be effected by boring into it at various places with the nitrate-of-silver stick; but I prefer to use the galvanocautery or the Paquelin.

Mercurial stomatitis requires the immediate stoppage of all mercurial medication. A 5-per-cent. chlorate-of-potash solution must be freely employed as a mouth wash; permanganate of potash (No. 113, p. 214) is also useful. The ulcerations should be touched every two or three days with the nitrate-of-silver stick or with a 5-per-cent. chromic-acid solution.

LEPRA.

Synonyms.—Leprosy, elephantiasis Græcorum, lepra Arabum, *Aussatz* (Ger.), *lèpre* (Fr.).

Definition.—A chronic infectious disease, caused by the growth of the lepra bacilli in the skin, mucosæ, the connective tissue of the internal organs and peripheral nerves, and manifesting itself on the skin by yellowish-brown macules or reddish and bronzed confluent tubercles, together with various paræsthesiæ and affections of the internal organs, and ending in death from internal complications or marasmus.

Symptoms and Course.—Leprosy, so common in the civilized world up to the fifteenth century that laws regarding the marriage of lepers were made by Charlemagne, and that so small a country as England contained one hundred and twelve houses devoted to their care, had long been so infrequent that its existence had almost been forgotten when it was rediscovered by Daniellsen and Boeck early last century. It had, however, by no means disappeared. India, China, and Japan had been its main seat, but cases have always existed in the outlying districts of Europe, in Spain, Portugal, Italy, southern Russia, Norway, and the Baltic provinces. In the western hemisphere it is now found in Brazil, Guiana, the West Indies, and the Sandwich Islands; and there are lepers among the Chinese of San Francisco, the Norwegians of the Northwestern States, and the creoles of Louisiana. Occasional cases are seen here, but they are all importations from countries where the disease prevails.

Leprosy is a most chronic disease, lasting from five to twenty years before it reaches its fatal termination. Its onset is insidious, indefinite prodromal symptoms appearing for months or years before its definite outbreak. These consist of malaise,

depression, lassitude, anorexia, diarrhea, and general gastro-intestinal disturbance, with occasional febrile attacks of a malarial type. Then comes the prodromal eruption, sometimes taking the form of lentil- to hand-sized, irregular, deep-seated infiltrations of a brownish-red color (*lepra maculosa*), and at others that of serous bullæ, that leave ulcerated areas behind (*pemphigus leprosus*). After one or more of these eruptions there occurs an interval of some months or a year or two before the regular symptoms appear. These take two distinct forms, the tubercular and the anesthetic.

Lepra tuberosa or tubercular leprosy is the commoner form of the disease, including 60 to 70 per cent. of all cases. After the prodromal macular stage above



FIG. 112.—*Lepra tuberosa*.
Case of Dr. S. Garcadiago, Guad-
alajara, Mexico.

mentioned there appear on the body pea- to bean-sized, isolated, circumscribed, infiltrated spots, which finally become elevated into rounded tumors. They increase very slowly in size, and by coalescence finally form large nodular masses. Their color is reddish brown, coppery, or bronze, and their surface is covered with a smooth and shining skin. They appear anywhere on the body, save on the scalp and glans penis; but the face is always involved, and here they cause great and characteristic deformity. The nose and upper lip are swollen and infiltrated; the lower lip and ears are thickened and stiffened; the cheeks and forehead are occupied by large tuberous masses, and the whole face assumes a sullen, scowling expression (*facies leonina*). The trunk, the knees, and the dorsal surface of the hands are also markedly affected. Tubercles appear in the mucosæ of the nose, mouth, and throat; the tongue is infiltrated, swollen, and fissured; the voice becomes rough and toneless, and œdema of the glottis may occur; and there is a peculiar sweet and sickly odor to the breath. The hair becomes dry and falls out.

The nodules may be few or many; they are frequently very painful, and always tender to pressure, so that motion of the parts is greatly interfered with. As they slowly grow in size and coalesce into larger tuberous masses, erysipelas-like attacks occur from time to time, marked with fever, diffuse reddening of the affected areas, and the appearance of new papules or the involvement of the internal organs. This was very noticeable in a case that I had under observation for a long time at Charity Hospital some years ago; he had several severe attacks of this character each year, each one coincident with an increase of the tubercular eruption.

After growing slowly for months and years, retrogressive changes finally set in. These may be interstitial in their nature, the mass gradually melting away, leaving dark, pigmented, atrophic areas behind. The cartilages and the bones may thus be destroyed without the appearance of ulceration. Usually, however, that process

finally sets in, probably occasioned by added external traumatisms, and flat, dry, and indolent leprous ulcers result. They lead to great destruction of tissue; the nose, fingers, toes, and even an entire limb, may be lost (*lepra mutilans*). The eyes may be destroyed by the breaking down of tubercles of the cornea and iris; œdema of the glottis may occur; and the facial deformity becomes a terrible one. Marked symptoms of mental deterioration set in, and the patient finally dies from an intercurrent disease,—pneumonia, phthisis, Bright's disease, etc.,—from involvement of the internal organs or from general marasmus. The process is an extremely chronic one, frequently lasting for ten or more years.



FIG. 113.—*Lepra mutilans*.
After Joseph.

Lepra nervorum, anesthetic or macular leprosy, is commoner in the tropics, and is characterized by nerve lesions and subsequent trophic changes in the skin. After a preliminary period, marked by formication, pain, numbness, tenderness in various places, or general hyperæsthesia of the skin and shooting pains in the nerves, there occurs a gradual loss of sensibility and the power of motion in certain parts. Then appear pale-yellow, circumscribed discolorations of varying size, which spread peripherally, with clearing centers, and coalescing into irregular areas. They finally become atrophic, preternaturally white, wrinkled, dry, and glazed, or covered with a fine desquamation. Complete anæsthesia finally sets in, either limited to the spots or extending over the entire body; in consequence of which the patients suffer from traumatisms, ending in ulcerative processes that form the mutilating variety of the disease described above. Bullæ occasionally appear, leaving anesthetic areas behind. Atrophy and contraction of the muscles go hand in hand with the other trophic processes. The hands become clawed, there is wrist-drop, the face is deformed, the eyelids and mouth cannot be closed, and the tears and saliva flow away. The nails become dark and fall off; the hair loses its luster and falls out. Painful swellings appear along the course of the peripheral nerves. The patient's strength gradually decreases; ulcerative, pyemic, and erysipeloid complications set in; the intellect is dulled; and death occurs from diarrhea, Bright's disease, phthisis, or general marasmus. The malady is even slower than the tubercular form, lasting from fifteen to twenty years.

Etiology.—The cause of leprosy is the presence and growth of the specific micro-organism, the *Bacillus lepræ*, in the tissues. First discovered by Hansen in 1880, it has been found in all the various lesions of the disease. That it is transmitted by heredity is very questionable. It is undoubtedly contagious: Father Damien

acquired it after devoting himself for years to the care of the lepers on the Sandwich Islands, and Arning successfully inoculated a malefactor in Madeira. But its contagiousness differs from that of syphilis, tuberculosis, and the other infectious granulomata in that a very prolonged exposure is required. There is absolutely no danger from the disease under ordinary conditions. Lepers lived for years in the dermatological wards of the Charity Hospital of New York without communicating the disease. As is the case with syphilis, all attempts to inoculate it on animals have failed.

Pathology.—The lesion of leprosy is a granuloma like that of syphilis and tuberculosis, a round-cell infiltration containing the bacilli and caused by their presence. It is found in the corium of the skin, in the mucosæ, the lymphatic glands, kidneys, liver, and other internal organs, and along the course of the peripheral nerves. The bacilli are readily demonstrated in sections of the tubercles; they are rod-shaped organisms about half the size of a red blood-corpuscle, and are often contained in large cells, the so-called lepra cells. A slight cellular infiltration gives us the macular form of the disease, and a larger accumulation the tubercular. In the nerve-sheaths the bacillus causes a connective-tissue new growth with subsequent degeneration of the nerve-fibers, an ascending neuritis, and, finally, disease of the central organs. The skin or mucous membrane lesions are always primary, though we do not know the point at which the virus enters the system.

Diagnosis.—Lepra rarely or never occurs in individuals who have not resided in regions where it is endemic, a point of great value in its earlier and less characteristic stages. When fully developed, whether tubercular, anesthetic, mutilating, or mixed, it can hardly be mistaken for any other disease. The tubercular or tuberculo-ulcerative syphiloderm runs a much more rapid course, and soon undergoes absorption or ulceration; there are no disturbances of sensibility; the characteristic location and symmetry of lepra are absent; other symptoms of syphilis are present, and the reaction to antiluetic treatment is marked. Syringomyelia causes deformities of the extremities similar to those of leprosy, but anæsthesia is always absent. Lupus is not so symmetrical, nor are its tubercles so large and varnished. Sarcoma cutis is more generally distributed; it has a quicker course and is rapidly fatal. Morphæa and vitiligo show neither hyperæsthesia nor anæsthesia, and are not accompanied by constitutional symptoms.

Prognosis.—This is entirely bad; the malady is slow, but invariably ends fatally.

Treatment.—Prophylaxis consists in forbidding the intimate contact of leprosy with healthy people; but strict isolation, and the barbarous methods too frequently employed to effect it, are entirely unnecessary. Remedial treatment can only be palliative, since all the various remedies that have been recommended have had no effect on the disease. Of these the chief are gurjun balsam, in doses of 75 to 150

grains daily; chaulmugra oil externally, and internally in doses of 3 drops to 1 dram thrice daily; ichthyol and resorcin, internally and externally. Each has had its advocates, but none has stood the test. A change to a climate where the disease is not endemic has a good effect in many cases; but it must not be forgotten that the malady frequently remains stationary for long periods of time.

MYCOSIS FUNGOIDES.

Synonyms.—Granuloma fungoides, eczema tuberculatum, *lymphadénie cutanée* (Fr.).

Definition.—A chronic infectious disease of the skin, caused by the growth therein of an as yet unrecognized microorganism, and characterized by the appearance of one or more firm, reddish, fungating tumors, together with various secondary dermal phenomena, and terminating in death from marasmus or complications.

Symptoms and Course.—This rare disease is regarded by some authorities as a variety of sarcoma, and by others as a lymphadenoma of the skin; but it is certainly a true infective granuloma. Two distinct stages are usually observed, but in some cases the first one is absent or passes unnoticed. This is the stadium præmycoticum, in which the symptoms are often indefinite and closely resemble those of other more common skin diseases. Pruritus, either local or general, is very marked, and with it there occur eczematous, erythematous, psoriatic, and urticarial lesions on the skin of the trunk and extremities. The excoriations from scratching still further diversify the picture, and in this stage the malady may remain for months and years. Then there appear flat, irregular or curved, reddish or livid, and itchy infiltrations, which may remain dry or become covered with secretion or scales. This leads to the second, more characteristic stage, the stadium mycoticum. The circumscribed infiltrations, bean- to hand-sized or larger, develop into broad or pedunculated papillary tumors. Their color is pinkish or brownish red, or darker; there may be few or many; and their papillary and rugose surface may be dry and covered with epithelium, or crusted, or excoriated and secreting. In the latter case a fetid fluid exudes from the tumors and renders the patient an object of disgust to himself and others. Any part of the body may be affected, but the face and neck are especially apt to be involved. The tumors occasionally disappear by resorption, leaving pigmented areas behind; but new ones continually arise in their place. Enlargement of the lymphatic glandular system now becomes a prominent symptom. The general health finally suffers, diarrhea sets in, and the patient dies of exhaustion or intercurrent disease. The malady occurs at all ages, but is most often

seen after the fortieth year, and, with the exception of isolated instances in which the first stage is absent, takes a number of years—ten to fifteen—to run its course.

Etiology.—The exact cause of the disease is unknown, the pathogenic microbe not having yet been isolated.

Pathology.—The process consists of the development of a granulation tumor in the corium, which does not differ essentially from that of the other infective diseases of this class.

Diagnosis.—The persistent and violent itching, with the scratch effects, lasting for years, and the appearance and retrogression of the eczema-like infiltrations, are our only diagnostic criteria in the early stages of the disease. These are often not sufficiently characteristic to permit a diagnosis to be made. The indolent papillary tumors of a fully developed case render the diagnosis more easy. Syphilis has no itching, has copper-colored infiltrations, and reacts to antiluetic treatment. Cutaneous gummata tend to early purulent degeneration, which only occurs exceptionally in the latest stages of mycosis fungoides, more especially after irritation. Lepra has the anæsthesia and other nervous symptoms, the bullæ, and the mutilations; it does not occur here, and the characteristic bacilli can be readily demonstrated. Lupus vulgaris has a rapid involution, and the occurrence of ulceration and scarring is characteristic.

Prognosis.—This is generally unfavorable, more especially in the later stages. Intercurrent erysipelas has cured one case, and Köbner and Marianelli have each reported a cure under arsenic. The earlier the diagnosis is made the better the outlook.

No. 114. Arsenic Solution.

R Sol. Fowleri
Aq. cinnamom. aa. p. e.
Sig. Gtt. 6 to 20 t. d. in water after meals.

No. 115. Sodium Arseniate Solution.

R Natr. arseniosi gr. 5
Aq. dest. 3i
M 1 = 1½ grain.

No. 116. Camphor-Naphthol.

R β-naphthol 1 part
Camphor pulv. 2 parts

Treatment.—The treatment of mycosis fungoides is not to be regarded as hopeless, in view of the successes noted above. Arsenic must be given, either internally as Asiatic pill (No. 6, p. 46) or Fowler's solution (No. 114, p. 220), or, better, by the hypodermic administration of sodium arseniate (No. 115, p. 220), one half to one syringe-ful being injected daily into the skin of the back. Naphthol, preferably combined with camphor (No. 116, p. 220), the 10-per-cent. pyrogallol ointment (No. 93, p. 181), and the 10- to 20-per-cent. resorcin ointment (No. 20, p. 64) are recommended as local applications.

LUPUS ERYTHEMATOSUS.

Synonyms.—Seborrhea congestiva, lupus seborrheicus s. sebaceus, ulerythema centrifugum.

Definition.—A small-celled new growth of the skin, appearing as various-sized reddish patches covered with grayish-yellow fatty and adherent scales, ending in interstitial atrophy and cicatrix formation, and sometimes accompanied by general symptoms and terminating in death.

Symptoms and Course.—When Cazenave gave this malady its name in 1851 his selection was not a happy one; for there is no relationship between lupus vulgaris, which is a tubercular granuloma, and this circumscribed erythema of unknown origin associated with seborrhea and ending in interstitial atrophy. Hebra, in fact, described it as a congestive seborrhea, and in some of its manifestations it is apparently closely related to atrophic rosacea. It begins with one or more primary efflorescences consisting of reddish, pinhead- to pea-sized, slightly elevated, shining spots, with small adherent seborrheal scales in their centers. When these scales are lifted up one or more minute plugs are found projecting from their under surfaces, which have evidently fitted into the dilated ducts of the sebaceous glands, which are patulous and open. The spots grow slowly by peripheral extension, adjacent lesions unite, and new ones appear at the margins until the disease is fully developed. Two distinct varieties occur, differing from each other in form of invasion and subsequent course.



FIG. 114.—Lupus erythematosus.
Case of Dr. R. Abrahams.

The more usual form is that known as lupus erythematosus discoides, in which the primary lesions unite to form one or more sharply circumscribed efflorescences which spread slowly by peripheral extension and by the coalescence of new marginal papules. The advancing edges of the patch are broad, and somewhat elevated; they

end abruptly toward the sound skin, and slope gradually to the center of the patch. Their color is a vivid red, disappearing under pressure. The center of the patch sinks in and becomes atrophic, and finally there is formed a flat, smooth scar, often marked with tortuous and dilated vessels. Seborrheal scales are usually present; they are firmly attached, and on removal show the characteristic plugs projecting from their under surfaces. Comedones and sebaceous accumulations are common in the neighborhood of the lesions, and there is often a marked accumulation of pigment in the normal skin near the advancing infiltrated wall. In some few cases the inflammation and infiltration are slight, the margin of the patch is pale and but little elevated, and the scales absent; but interstitial atrophy of the center of the diseased area always occurs and is a characteristic change. Where there are no sebaceous glands the scales and their plugs are not present; thus on the palms the affected skin is dry and hard (*lupus erythematosus corneus*), or œdematous and inflamed.

The fully developed lesion is rounded or discoid in shape, though it may be gyrate when adjacent areas have united. Its seat is oftenest on the nose and neighboring parts, appearing as two symmetrical lateral masses, one on each cheek, with a smaller central connecting portion occupying the bridge of the nose (*butterfly lupus*). The scalp is frequently affected, and here the atrophic process leads to permanent loss of hair. The lips, eyelids, and ears are not uncommonly symmetrically involved, but the affection is rare upon the trunk.

The course of *lupus erythematosus discoides* is exceedingly slow, lasting many years. It may remain apparently stationary for long periods of time. Pallor of the margin shows cessation of the peripheral cell growth, and when cure has taken place a thin, shining, and very superficial scar is left behind. The disease is seen oftenest in women from twenty to forty years of age. Spontaneous ulceration never occurs, and there are no subjective symptoms and no disturbance of the general health; but the deformity that is entailed is serious.

Lupus erythematosus disseminatus s. aggregatus is a very much rarer form of the disease, and, though the primary efflorescences are similar to those of the discoid form, it runs a very different course and shows all the symptoms of an acute or subacute infective disease. Its onset is accompanied by high fever, even up to 104° F., with gastro-intestinal disturbance, pains in the limbs, and headache of marked severity; with which are sometimes associated inflammatory effusions in the joints. The acuity of the invasion may be such that coma and death may occur therein; even cases that recover from the first attack suffer from relapses and finally die, and the general mortality from this form of the malady reaches 50 per cent. The constitutional symptoms are accompanied by an eruption of the characteristic efflorescences of the disease, which usually first appear on the face, but soon spread over the body; they are often well-nigh universal, even the soles and palms being affected. It is characteristic of this form of the disease that, while the lesions are identical with those of the discoid variety, they do not spread peripherally; the eruption

comes out as a whole within a short time, and remains stationary. Retrogression of the general symptoms has no effect, however, on the dermal lesions. An intense, persistent, diffuse reddening of the face (*erysipelas perstans faciei*) frequently results from the acute attacks, and in the worst cases an eruption of clear or hemorrhagic bullæ accompanies the process.

Etiology.—The cause of lupus erythematosus is unknown, but it is undoubtedly a bacillary infectious disease. The French authorities regard it as a tuberculosis, but this can hardly be the case, since tubercle bacilli have not been found, and inoculation experiments on the lower animals have not succeeded. Seborrhea, rosacea, and erysipelas seem to predispose to its occurrence. Many cases begin as a congestive seborrhea, the symptoms of which frequently remain present throughout the disease; so that there is ground for the assumption of a relationship between the processes.



FIG. 115.—Lupus erythematosus.
Case of Dr. R. Abrahams.

Pathology.—The disease process is a chronic inflammation of the cutis, leading to degeneration, and ending in atrophy. The entire tissue or a part of it is infiltrated with an accumulation of small round cells, often appearing first in the neighborhood of the vessels; and the sebaceous glands are always involved and hypersecreting. The new cells finally undergo fatty degeneration; the glandular structures atrophy; the hairs fall out; and a new connective tissue, which undergoes cicatricial contraction, replaces the destroyed elements.

Diagnosis.—The broad, somewhat elevated margins of the patch; the seborrheal scales with processes from their under surfaces dipping into the dilated mouths of

the glands; the central and very superficial scarring; and the extreme chronicity of the process, are characteristic of lupus erythematosus. Lupus vulgaris has its peculiar brownish-red, soft, deep-seated papules, and usually ulcerates; the cartilages are involved; the malady begins in youth; and the seborrheal scales and plugs are entirely absent. A rosacea is found in the location that is the favorite seat of lupus erythematosus; but the dilated vessels, the acne pustules, the absence of sharp limitation and of scarring will serve to distinguish it. Chronic eczema of the impetiginous or squamous form shows moisture, papules, vesicles, and crusts; it is not sharply limited and is never followed by scarring. Trichophytosis is rapid in its course, has no infiltrated margin, has a paler center, shows readily detachable scales, is accompanied by itching, and the nibbled-off hairs are characteristic when the scalp is affected. A non-ulcerated serpiginous syphiloderm may resemble lupus erythematosus; but the marked infiltration, the coppery color, the absence of seborrheal scales, with the presence of other luetic symptoms will serve to distinguish it. It seems impossible that psoriasis, with its shining scales and bleeding points, its characteristic seat, and the absence of scarring and loss of hair, should be mistaken for the disease.

Prognosis.—The general health is not affected in lupus erythematosus of the discoid variety, but the prognosis as to cure is always doubtful. Some cases recover even without treatment, while others are most obstinate. In all cases some scarring results. The aggregate form is more serious; acute exacerbations, with inflammations of the thoracic organs, not infrequently occur, and lead to a fatal termination.

Treatment.—Phosphorus has been recommended by Bulkley; and anemia, chlorosis, and other general conditions that may be present must be appropriately treated; but internal medication is of little use in the disease. In the local treatment we must always remember that recovery with a very superficial scar is the rule, and that destructive measures are to be employed only when the milder ones fail. No certain rules can be laid down; some cases are very sensitive and will bear only the mildest ointments. The following method has been useful to me. After the removal of the seborrheal scales with soap and water, green soap, preferably in the form of the tincture (No. 5, p. 43), should be rubbed into the patch daily, followed by the permanent application of mercurial ointment or plaster, or plaster-mull. Duhring recommends the sulphur ointment (Nos. 24, 25, p. 64), and naphthol (No. 48, p. 105, No. 124, p. 243) does well in some cases. Ichthyol in 10- to 20-per-cent. strength as salve, paste, plaster, solution, or varnish (No. 72, p. 137, No. 85, p. 165, No. 87, p. 169), or the ichthyol-mercury salve (No. 53, p. 113), are somewhat more irritant but efficacious applications. The 10-per-cent. pyrogallol salve (No. 44, p. 100, No. 93, p. 181) may also be tried; and in cases that can bear it the cade-sulphur-green soap ointment (No. 117, p. 225) is a good application.

Obstinate cases may resist all these measures, and we must have recourse to



CHRONIC ECZEMA WITH LICHENIFICATION.



TYPOGRAVURE.

RHINOSCLEROMA.



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CHROMOPHYTOSIS OF FACE.

PLATE LIV.

the more active agents. Iodized glycerin (No. 119, p. 225) may be applied to the part once daily, or lactic acid (No. 118, p. 225) as recommended by Joseph may be similarly employed. Some cases require the use of the stronger acids—trichloroacetic, chromic, nitric, or even sulphuric acid being cautiously applied by means of a glass rod, followed by the use of a soothing ointment. A solution of caustic potash, 1 part to 2 or 4 of water, may be used every fifth day or so, care being taken to prevent too deep an effect by the use of dilute acetic acid immediately afterward. The superficial use of the Paquelin cautery upon the margins of the patch, or “cross-hatching” it with the scarificator (Fig. 15, p. 50), followed by a dressing of powdered iodoform, has given good results in some cases.

No. 117. *Cade-Sulphur-Green Soap Ointment.*

℞ Ol. cadini
Sulph. lot.
Sapo. virid. āā. p. e.

No. 118. *Lactic-acid Solution.*

℞ Ac. lactici
Aq. destil. āā. p. e.

No. 119. *Iodized Glycerin.*

℞ Iodin. pur.
Kal. iodidi āā. 1 part
Glycerin 2 parts

In the diffuse form of the malady local treatment is restricted to cold applications, lead lotions, and the simple ointments (No. 17, p. 61, No. 26, p. 70, No. 29, p. 74, Nos. 68, 69, p. 135). Pallor and diminishing size of the infiltrated margin are the first signs of improvement in the patches; and they are the signal for us to stop all more irritating measures and go back to green soap and mercurials, or even milder measures.

RHINOSCLEROMA.

Definition.—A chronic infectious granuloma affecting the skin of the nose and upper lip, and the nasal and pharyngeal mucosæ, and characterized by the formation of permanent, dense, contracting infiltrations.

Symptoms and Course.—This very rare disease, first described by Hebra and Kaposi in 1870, begins as one or more nodular infiltrations in the nasal mucous membrane or in the skin around the anterior nares. At first isolated, they slowly increase in size, unite into larger tuberculous masses, and spread forward on to the upper lip, the alæ and the septum of the nose, as well as backward along the floor of the nostril on to the velum, pharynx, soft palate, epiglottis, and even the larynx. Their consistency is peculiarly hard and dense, resembling ivory to the touch; the skin and mucosa covering them are immovable, and their glandular structures are

destroyed. Around the anterior nares the tumors form rounded or oval masses covered with a smooth, brownish-red or pale skin, in which neither hair-follicles nor sebaceous glands are to be found. Here they occasion a characteristic deformity, the nose and upper lip being greatly indurated and thickened, and all the structures flattened, as it were, upon the face. Slight superficial excoriations of the skin over the tumors are sometimes seen, but otherwise they are not subject to any retrogressive changes; once formed, they are permanent.

The affection is a very chronic one, often lasting for from ten to twenty years, and has been most commonly seen between the ages of twenty and thirty. It interferes in no way with the general health; but the obstruction of the anterior nares finally prevents nasal respiration, and the extension of the process into the fauces, epiglottis, and larynx so interferes with respiration that the patients die therefrom or from intercurrent chest disease.

Etiology.—The cause of the disease is the bacillus described by Frisch, Cornil, Alvarez, and others. It is an elongated, rod-shaped organism enveloped in an oval capsule, and closely resembles the pneumococcus in appearance. It is found among the connective-tissue fibers of the part, in the lymphatic vessels, and in the peculiar large cells.

Pathology.—The small-celled infiltration in the corium does not differ from that of the other granulomata in its early stages, but it rapidly develops into a firm connective tissue, and even into cartilaginous and bone-tissue. Characteristic giant cells have been described by Mikulicz, and the bacilli mentioned above are always present.

Diagnosis.—The seat of the tumors, their ivory hardness, the smooth skin covering them, the absence of any retrogressive changes, and the extreme chronicity of the disease, are characteristic. Rhinophyma is a soft, doughy, lobulated tumor of the nose, with enlargement of the sebaceous glands and increase of their secretion, and follows long-standing rosacea. Keloid is rare on the nose, but some of the harder forms might resemble rhinoscleroma closely. Microscopic examination of an excised fragment will, however, show it to be composed of ordinary connective tissue, and no bacilli will be found. A syphiloderma is very much less dense, ulcerates or undergoes other retrogressive changes, and has a much more rapid course.

Prognosis.—This is essentially bad; the growth of the tumor is steady, though slow, and it finally destroys life by its interference with respiration. There is little to be hoped for from treatment, even as regards temporary relief from the deformity and disability.

Treatment.—Interference should be postponed so long as the patient is not seriously inconvenienced by the growth. Complete excision is impossible, on account of its location, and partial removal is always followed by renewed growth. Attempts may be made to keep the nostrils open by means of tents, metallic or glass tubes, or by the excision of portions of the mass. Temporary good results have

been reported from the use of 1-per-cent. sublimate (No. 43, p. 100), and salicylic-acid ointments or pastes (No. 125, p. 243), combined with the internal administration of the latter drug.

ACTINOMYCOSIS.

Actinomycosis is very rare as a primary disease of the skin, usually occurring secondarily to actinomycosis of the jaw, to which the ray parasite, the cause of the disease, obtains access through a carious tooth. It appears as one or more deep, subcutaneous, livid nodules, situated most commonly around the jaw or on the neck, which spread, undermine the skin, break down, and finally give vent to a purulent or sanguineous fluid. In this are pinhead- to pea-sized sulphur-yellow bodies, which the microscope shows to be composed of masses of the ray-shaped fungus. The malady is very slow in its course; it was formerly supposed to always terminate fatally from marasmus caused by the long-continued suppuration, or from metastasis to the internal organs; but the prognosis is now regarded as more favorable, spontaneous recovery taking place in many cases, and others remaining stationary for years. The only treatment is the surgical one. The tumors may be laid open and scraped out; fistulous tracts can be curetted, and the galvano or Paquelin cautery can be freely used. In many cases ordinary antiseptic dressings will suffice.

3. INFLAMMATIONS OF THE GLANDS.

Inflammation of the sweat-glands is of rare occurrence, and can be briefly discussed. Inflammations of the sebaceous glands are among the most frequent of dermal affections, including acne, rosacea, and folliculitis.

HYDRADENITIS.

Hydradenitis, an inflammatory affection of the sweat-glands, appears as circumscribed, firm, hard, deep-seated nodules, from pinhead- to pea-size, from the upper surface of which a hard cord, the inflamed duct, can be felt passing to the surface. It is a rare affection, its most usual seat being the face, the genitocrural fold, and the neighborhood of the anus. The inflammatory products usually undergo absorption; more rarely, suppuration and perforation, followed by fistula formation, ensue. It occurs most often in persons affected with hyperidrosis, more especially when complicated with other inflammatory infections of the skin—eczema, ringworm, etc. The treatment is that appropriate to the hyperidrosis or other disease conditions that may be present. The mercurial-carbolic plaster-mull is a good local application, but if suppuration has set in incision is required.

ACNE.

Synonyms.—Acne vulgaris, *Hautfenne* (Ger.), *acné* (Fr.).

Definition.—A chronic inflammation of the sebaceous glands and their periglandular tissue, characterized by the appearance of multiple, firm, painful, reddish or violaceous papules or tubercles, and of pustules, on the face, back, and other portions of the body.

Symptoms and Course.—This very common affection is most often seen in persons of dark complexion and with coarse, greasy skins, and is usually associated with

seborrhea of the dry and oily varieties, and comedo. Sebaceous hypersecretion and plugging of the gland orifices are followed by a follicular and perifollicular inflammation. The lesion begins as a minute, acuminate, hard, reddish papule, in the center of which there is usually a comedo (acne punctata). Increase of the inflammation leads to the formation of pea-sized or larger nodules and tubercles of a reddish or violaceous color (acne papulosa). The inspissated sebum is usually infected with pus organisms; suppuration begins in the deeper portions, and though no pus may be visible, puncture or in-



FIG. 116. — Acne punctata.
From photograph by the author.

cision will reveal its presence. Finally the pus reaches the surface, and the lesion becomes an acuminate pustule seated on an infiltrated, inflamed base (acne pustulosa). As the inflammation subsides the pus desiccates into a crust, and when this falls off a small circular or elliptical scar is left behind, for in all but the most superficial lesions the corium is destroyed. Each separate papule and pustule runs an acute course and ends in a few days; but the constant appearance of new ones prolongs the dis-



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ACNE
PLATE XLI

ease, which may last for many years. The lesions appear irregularly, and all the various stages are usually present at one and the same time.

Sometimes the amount of the inflammatory induration is very great (*acne indurata*), and occasionally adjacent nodules and pustules coalesce to form larger infiltrations, and dermic abscesses of varying size result. In the worst cases the skin is covered with scars and sown with inflammatory nodules, pustules, and comedones, while the irritation of the sebaceous glands causes the integument to be constantly covered with an oily secretion of unpleasant odor (*acne inveterata*).

The eruption of ordinary acne is symmetrical, though irregular in its distribution. It is found on the forehead, cheeks, chin, and upon the back, the regions where the sebaceous glands are largest and most active. It is rare elsewhere, and on the palms and soles, which have no sebaceous glands, it does not occur. It is seen in both sexes, but is commoner in males than in females. It is a disease of early youth, occurring between the period of puberty and the thirtieth year, and it usually gets well spontaneously when that age is past.

Certain varieties of the disease remain to be described. In *acne atrophica* there is no pus formation; interstitial absorption of the products of inflammation occurs, and depressed cicatrices are formed. *Acne hypertrophica* is due to the not uncommon development of keloidal outgrowths from the scars. Tubercular, anemic, and marantic patients suffer from *acne cachecticorum*, an obstinate affection, in which flat livid or violaceous papules occur rather on the body than upon the face, and, though they do not suppurate frankly, leave deep cicatrices behind them. *Acne varioliformis* s. *necrotica* occurs on forehead, temples, scalp, and the nape of the neck, and appears as pustules that leave deep, variola-like depressions behind. Irritation of the sebaceous glands by certain medicinal substances, either coming into the follicles from without when applied to the skin, or taken internally



FIG. 117.—*Acne pustulosa*.
From photograph by the author.

and excreted through the sebaceous glands, causes an artificial acne. This may occur from the application of paraffin, tar, oil of cade, creosote, petroleum, etc. (*acne medicamentosa* s. *picealis*). The internal use of iodine and bromine may have the same result. The iodine acne appears as large conical infiltrations on vivid red bases,

while bromine causes more extensive infiltrations with suppurative destruction of the follicles and surrounding tissue. These various drugs have been demonstrated in the secretion of the glands.

Acne in its superficial and slightly marked forms is a trivial disorder, but in its severer ones it is a serious evil. This is more especially the case in the female, since it occurs during the years when marriage is most frequently contracted. It is always a very chronic and often a very obstinate disease.

Etiology.—Mechanical irritation from inspissated and changed sebum, and infection with pus-cocci, are the immediate causes of the development of the acne lesions. In the acne from the internal use of the bromides and iodides the noxious material is excreted with the products of the glands; in those from the use of tar, pyrogallol, chrysarobin, etc., it reaches these organs from without. But the real reason of the inspissation and change in secretion is often obscure. The most important factor of all is undoubtedly the advent of puberty. The sebaceous glands at that time participate in the general glandular development, there being a close physiological relationship between the genital organs and the skin, as Hyde has pointed out (antlers of the stags, plumage of birds). Uterine



FIG. 118.—Acne bromata.
Case of Professor Elsberg, Warsaw, Poland.

diseases and disorders of sexuality are undoubtedly important factors. Gastro-intestinal disturbances, general cachexias, anemia, chlorosis, etc., are the causes of some cases. But acne not infrequently occurs in otherwise perfectly healthy individuals.

Pathology.—The anomaly of secretion causes a folliculitis of the sebaceous

glands, and to this there succeeds a varying amount of perifollicular inflammation, often ending in suppuration. The glands are frequently destroyed, but the hairs are lost only in the worst cases. The deeper-seated nodules and pustules lead to permanent scarring.

Diagnosis.—The age of the patient, the seat of the eruption on the face and back, the acute course of the individual lesions and the chronic course of the entire malady, the presence of comedones, seborrhea, and dermic abscesses, with the absence of grouping, ulceration, and crusting, sufficiently distinguish the malady. Its diagnosis from the early pustular syphiloderm is sometimes difficult; but the latter has greater infiltration, is copper-colored, affects the whole body, and often the palms and soles, is grouped, and is almost always associated with other syphilitic symptoms. The tertiary pustular lesion of syphilis is grouped and has characteristic crusts and spreading ulcerations. Variola sometimes resembles an acne; but the umbilication of the pustules, their acute course, and the presence of general symptoms should prevent mistakes. Rosacea occurs almost always after the thirtieth year, affects the middle two thirds and not the sides of the face or the back, and shows marked hyperemia and dilated vessels; and, though acne pustules are frequently present, there is no danger of confounding the two diseases.

Prognosis.—This is good; spontaneous recovery occurs in most cases before the twenty-fifth year, and few last beyond the thirtieth. Successful treatment depends much on our ability to discover and remove the cause. Permanent cicatrices and keloidal scars occur in some cases.

Treatment.—The removal of the cause of the acne, if such can be found, is the first essential of successful treatment. Dyspepsia and constipation must be carefully attended to, saline cathartics and the laxative mineral waters being regularly employed. Anemia and chlorosis must be treated with iron, bitter tonics, and the mineral acids; and here Startin's mixture (No. 19, p. 64) is especially serviceable. The uterine functions must be carefully inquired into and any anomalies corrected. The use of iodine, bromine, and their salts must be stopped, and external irritants, dust, tar preparations, etc., must be kept away from the skin. The diet should be carefully regulated, and usually much restricted, more especially as regards meats. Confectionery, pastry, pickles, etc., must be entirely forbidden. Obstinate cases should be restricted to a diet of fish, fruit, and light vegetables, and it is sometimes necessary to put our patients on a strict milk diet. The care of the general health is of the utmost importance; fresh air, bathing, and exercise must be sufficiently provided for. An excellent general measure is the daily sponging of the body with salt water as cool as can be borne, followed by a vigorous rubbing with a rough towel.

Internal treatment directed to the acne itself is not of much use. Ichthyol in pill form has seemed to do good in some cases (No. 120, p. 232). Cod-liver oil is effective in the frankly suppurative cases.

Local treatment is our main reliance, and of the many methods that have been advocated, the use of the curette, combined with massage and friction, is, in my experience, the best. The first step is to remove all comedones with the extractor (Fig. 16, p. 50), or by lateral pressure with the flat metallic handle of the scarificator or other instrument. A watch-key is a very inappropriate instrument for the purpose, since it cannot be kept clean and unnecessarily injures the skin. Then all nodular masses and pus collections must be thoroughly opened with the spud (Fig. 23, p. 51) or a tenotomy knife, care being taken to go deep enough to open up the infiltrations. Multiple punctures are required in the more extensive infiltrations, and even when no pus is obtained the opening up of the inflamed tissues and the slight hemorrhage do good. The entire affected skin must be thoroughly worked over with the dermal curette (Figs. 18, 19, 20, p. 50), the tops of all papules and infiltrations being torn off and the superficial epidermis and sebum removed. This process of comedo extraction, puncture, and curetting must be repeated once in three to ten days, in accordance with the sensitiveness of the patient's skin.

No. 120. *Ichthyol Pills.*

℞ Ammon. sulph-ichthyolat. 3iii
 Extr. glycyrrhiz. q. s. ft. pil. No. 90
 Sig. 2 to 4 t. d.

No. 121. *Lassar's Peeling Paste.*

℞ β-naphthol 1 part
 Sulph. præcip. 5 parts
 Petrolati
 Sapon. virid. āā. 2 "

Meantime the patient must employ certain auxiliary measures. Once or twice daily, or every other day, steaming, massage, and friction of the face must be performed, to stimulate the muscular structures of the skin and prevent the accumulation of epidermis, sebum, and dirt in the glandular orifices. With the head bent over a basin of steaming hot water, the face must be bathed continuously with a clean sponge or cloth for from fifteen to twenty minutes. The face is then vigorously rubbed with the tincture of green soap (No. 5, p. 43), washed off, and anointed with a mild sulphur ointment (Nos. 24, 25, p. 64).

These measures will suffice in the milder cases; but many severer ones are met with, in which the papules, pustules, and dermic abscesses continue to appear, and more radical measures are required. A peeling paste must be employed, to cause a desquamation of the epidermis and remove the accumulated material from the skin. I have found the one suggested by Lassar (No. 121, p. 232) efficacious; it should be spread over the face as thick as the back of a table-knife, and allowed to remain on for half an hour or until vigorous burning sets in. It is then wiped off with a soft cloth, and cold-cream (No. 69, p. 135) or simple ointment (No. 26, p. 70) applied, followed by a powder (No. 18, p. 61). This is repeated daily for from four to six days, until redness, swelling, and tension of the skin, followed by desquamation, set in. Then a mild powder or ointment is employed for a number of days; and the process is repeated as often as may be necessary. The resorcin-sali-



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ROSACEA
PLATE XLII

cylic-sulphur paste can be used in the same way (No. 42, p. 100), or the 1-per-cent. sublimate solution may be employed.

Other local applications that can be recommended are the 5- to 10-per-cent. ichthyol salves, pastes, and varnishes (No. 85, p. 165, Nos. 87, 88, 89, p. 169), and the sulphur lotion (No. 122, p. 233). Extensive hard infiltrations that cannot be curetted should be covered with the emplastrum or collempastrum hydrargyri, which hastens the absorption of the inflammatory material.

No. 122. Sulphur Lotion.

| | | | |
|--------------------|---|---|------------|
| ℞ Sulphur. præcip. | | | |
| Aq. amygdal. | . | . | āā. 1 part |
| Aq. calcis | . | . | 5 parts |

Relapses are very prone to occur. We must endeavor to prevent them by treatment of the cause underlying the acne and by careful attention to the hygiene of the skin. For this latter object the chief means is the free use of a good non-irritant soap and plenty of hot water.

ROSACEA.

Synonyms.—Acne rosacea, brandy or wine nose, *Kupferfinne*, *Kupfernase* (Ger.), *acné rosée*, *couperose* (Fr.).

Definition.—A chronic inflammation of the skin of the face, more especially of the nose, cheeks, and chin, characterized by the presence of diffuse redness, dilated blood-vessels, and inflammatory papules and pustules, and ending in hypertrophy of the integument of the part.

Symptoms and Course.—This common affection begins as a diffuse hyperemic discoloration of the skin of the nose, chin, cheeks, and forehead, which occurs from time to time after the ingestion of food, and especially of alcohol, and after laughing, coughing, excitement, exposure to cold, etc. Its color is bright red, with a tender and somewhat smooth skin, when the hyperemia is mainly arterial; and bluish or dusky red and cold when it is venous. Three stages are to be distinguished in its course. In its first and slightest form the diffuse pink or dusky redness is confined to the nose and disappears on pressure. In the second stage the redness is permanent and has spread on to the forehead, cheeks, and chin. The smaller arterioles and veins are permanently dilated and appear on the surface as minute tortuous reddish or bluish lines. Inflammatory nodules and pustules now appear, and form in some cases so prominent a part of the disease that it is often called acne rosacea. Most cases do not go beyond this stage; but sometimes, especially in the countries where wine or beer is the daily beverage, the third stage of rhinophyma or *Pfundnase* completes the cycle of changes in the integument of the face. Over-

growth of the connective tissue of the skin is added to the hyperemia, vascular dilatation, and acneform manifestations. Small outgrowths appear on the nose, and gradually enlarge and coalesce until they form violaceous or livid, pedunculated or sessile tumors and masses of varying size. The sebaceous glands become



FIG. 119.—Rhinophyma.
Case of Dr. F. B. Carpenter.

enormously enlarged, and the dilated ducts are plugged with dark, hard masses of inspissated sebum. In the worst cases the deformity is a very serious one, and the discolored hypertrophic mass hangs down in front of the mouth. On the cheeks and forehead the connective-tissue hypertrophy is usually not marked, and the process remains in the second stage. This third stage of rosacea is, strange to say, found in the male subject only.

Seborrhea of the dry or the oily variety is a regular accompaniment of rosacea, and forms a marked feature of the last or hypertrophic stage. The inflammatory follicular and perifollicular lesions are essentially the same as those of acne, and the papules and pustules are sometimes so numerous that the diagnosis between the two affections is difficult.

Suppuration of the glands and follicular abscesses also occur.

Etiology.—Rosacea has many causes, and in a general way is due to anything that causes congestion of the head. The commonest of these causes is the abuse of alcohol; but it is by no means the only one, and the malady occurs on many people who do not drink at all. Chronic dyspepsia, especially when associated with gastric dilatation, often determines its appearance; and since drinkers usually suffer from this affection, there are two causes for the rosacea in these cases. Sexual disturbances, and more especially uterine derangements (endometritis, dysmenorrhea, etc.), are efficient causes and account for many of the cases seen in women. Sudden changes of temperature, such as firemen, cooks, etc., are subject to, are also causative, and more or less rosacea is generally present in those whose occupation exposes them to the weather—coachmen, sailors, etc. Parts that have once been frozen are especially liable to become rosaceous.

Pathology.—The process is in the beginning a hyperemic stasis, affecting both the deep and the superficial vessels of the skin. This is followed by a hypertrophy and overgrowth of these structures, which is so characteristic a feature of the disease that the malady might be classed as a vascular new growth. Inflammation of the glands and the periglandular tissue ensues, and a connective-tissue new growth gives us the final stage of the disease.

Diagnosis.—This is usually readily made, in spite of the varied appearance of the malady. The mature age of the patient, the localization of the eruption upon the face, and the vascular and connective-tissue overgrowth are characteristic points. Rhinophyma is not likely to be confounded with rhinoscleroma, which is a very hard, smooth, and shining tumor, usually growing from the interior of the nose and affecting the skin only secondarily. Lupus vulgaris shows the characteristic non-elevated, soft, brownish nodules, and has a distinct limitation, ulceration, and a scar-tissue formation in which the tubercles are found. Lupus erythematosus is of slow growth, has infiltrations covered with adherent fatty scales with plugs projecting from their under surfaces, and central scarring. The tubercular syphiloderm has dark-brown grouped tubercles and ulceration, and never shows vascular overgrowth or glandular inflammation. Acne papules and pustules commonly occur with rosacea; but acne is not limited to the face, being found also on the back and chest; it is accompanied by comedones and inflammatory lesions, and there is no vascular hypertrophy.

Prognosis.—This is good in mild cases, more especially when the cause can be removed. Much depends upon the energy with which an appropriate treatment is carried out. The diffuse redness is harder to remove than the newly formed vessels and connective tissue.

Treatment.—A necessary preliminary to all measures directed against the rosacea itself is the treatment of any internal abnormality that may be present—more especially dyspepsia, and allied diseases of the gastro-intestinal tract, and uterine derangements. The use of alcohol must be entirely forbidden, and tea and coffee must be taken but sparingly. Very little can be done for the cases in which the rosacea is dependent upon the patient's occupation and in which the cause cannot be removed. In those necessarily exposed to the effects of wind and weather, or heat, our best efforts will be merely palliative. Ichthyol in 1- to 3-grain pills thrice daily has been recommended (No. 120, p. 232). Ergot in half-dram doses twice or thrice daily for long periods has done good in my hands, probably on account of its vasoconstrictor properties.

The local treatment for mild cases is similar to that recommended for acne. We must distinguish between the arterial and the venous form of rosacea in our choice of topical remedies. In arterial rosacea, with a hot, dry skin, sulphur in 10-per-cent. paste or salve, or ichthyol in 5- to 10-per-cent. solution, ointment, paste, collemplastrum, or varnish (No. 72, p. 137, Nos. 87, 88, 89, p. 169, etc.), may be applied nightly, a bland ointment or cold-cream (Nos. 68, 69, p. 135), followed by a powder (No. 18, p. 61), being used during the day. If the skin becomes too much inflamed the zinc-oil (No. 65, p. 135) should be employed until the irritation subsides.

Destruction of the dilated blood-vessels is necessary in all advanced cases, and may be effected in a variety of ways. If there are very many minute vessels visible, scarification may be employed, a limited area being "cross-hatched" in the artist's

manner daily or every few days. An ordinary bistoury or the scarificator (Fig. 15, p. 50) may be employed. Larger vessels should be split open lengthwise with a tenotomy knife, a very efficacious method of obliterating them. A small galvano-caustic point may be employed for the same purpose, a number of minute punctures being made along the course of the vessel, thus destroying it. Electrolysis has proved very serviceable in my hands, multiple punctures being made along the course of the vessel with the needle in the manner described under the treatment of hirsuties (p. 49). A very small amount of current, 2 to 5 milliamperes, suffices to occlude the vessel.

FOLLICULITIS.

Synonyms.—*Sycosis non parasitica*, *sycosis coccygenes*, *perifolliculitis*, *mentagra*, *Bartfinne* (Ger.), *sycosis non parasitaire* (Fr.).

Definition.—A chronic suppurative inflammation of the hair-follicles and neighboring tissue, chiefly affecting the beard, and characterized by the appearance of papules, tubercles, and pustules pierced by hairs.

Symptoms and Course.—Folliculitis begins with the appearance of small, red, hard, conical papules surrounding hairs, and scattered through the affected area or collected into groups. The papules are usually discrete, and they may increase in size so as to form tubercles and deeper nodules; but as a rule the fluid exudation becomes sufficient to form a pustule. In the papules the centrally implanted hairs are firmly seated, and are removed only with pain; the entire sheath is swollen and white or yellowish from infiltration with pus-cells. In the fluid of the pustules the hair and its sheath lie loose; the pilous structure can be readily removed, and sometimes falls out of itself. The pus may be evacuated or it may dry up into a crust; in any case the hair-follicle is destroyed and cicatricial tissue results. The continuous appearance of new papules in crops among the old ones may lead to the formation of more extensive infiltrations, in which the single papules can no longer be seen, and whose surface is covered with pustules and crusts pierced with hairs. Considerable losses of tissue may thus occur. Burning and itching, sometimes very considerable, accompany the process.

The malady is a very chronic one; advancing irregularly with the appearance of new papules, it may last for years confined to a limited area, or it may slowly spread over extensive surfaces of integument. Fully developed cases show a reddened, swollen, infiltrated skin covered with papules, pustules, crusts, and scales, and the entire hairy portion of the face is usually affected symmetrically. Sooner or later most of the hair-follicles are destroyed and their place is taken by cicatricial tissue. Old cases show a more or less completely cicatricial surface, in which there may remain a few scattered and badly nourished hairs.

Folliculitis is commonest on the bearded face and the mustache, but it may ap-



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PERIFOLLICULITIS BARBAE

PLATE XXXV

pear in any locality that is provided with strong hairs. It is found in the eyebrows and lashes, and occasionally occurs in the nostrils, and on the axillæ, pubis, and other portions of the body. It is rarest upon the head. It occurs almost invariably in the male sex, being one variety of the barber's itch of laymen.

Etiology.—Folliculitis is caused by the infection of the hair-follicles with pus-coeci, most commonly by means of brushes, towels, pillows, etc. Irritation of the skin by heat or cold, noxious soaps, powders, or cosmetics, etc., is the factor that predisposes the soil to their reception. Eczema is a not infrequent prelude to the appearance of the disease, and the chronic rhinitis that so commonly coexists with this affection upon the upper lip is indirectly responsible for the folliculitis.

Pathology.—The disease is an acute suppurative inflammation of the follicular and perifollicular structures, leading to the destruction of the hair-follicles and papillæ. The gaps are filled with cicatricial tissue, which varies in amount with the depth and extent of the destructive process. The term "non-parasitic sycosis" is a misnomer, since the disease is due to cocci-genic infection.

Diagnosis.—This is usually not difficult. The minute papules and pustules, each pierced by an apparently unaffected hair, usually beginning on the upper lip, and the very chronic course, are characteristic. Trichophytosis barbæ, ringworm of the beard, or parasitic sycosis, is more acute, progresses continuously, often shows ringworm on other parts of the body, has round, sharply limited affected areas or deep nodular and suppurating masses; the hairs are early affected, becoming loose and brittle, and break off with frayed ends; the malady is contagious; and the parasite



FIG. 120.—Folliculitis barbæ.
From photograph by the author.

can be readily demonstrated under the microscope. Eczema may occur with folliculitis; when it appears alone it shows moist, red, not sharply limited surfaces, covered perhaps with scales and scabs; and the isolated lesions are not pierced by hairs.



FIG. 121.—Folliculitis.
From a cast by the author.

Acne occurs on the non-bearded parts, chiefly in young persons; and the lesions are not situated around hairs. The tubercular syphiloderm has copper-colored infiltrations of slow development, and causes no pain; ulceration and other syphilitic symptoms are present, and it reacts to specific treatment.

Prognosis.—This is not entirely favorable; the malady is curable, but relapses are frequent. It may last for a few weeks or for many years. The greater the amount of suppuration, the more destruction of tissue will there be.

Treatment.—The treatment is a local one, and consists, in the first place, in treating the eczema or the rhinitis

that may be at the base of the disease. The hair over the affected area should be cut short, shaving being painful and tending to spread the infection. Crusts and scabs must be removed with compresses of olive-oil or poultices, aided by the use of the tincture of green soap when necessary (No. 5, p. 43).

Irritation of the skin should be allayed by a simple or cooling ointment (No. 26, p. 70, No. 29, p. 74, Nos. 68, 69, p. 135). Later on diachylon ointment (No. 71, p. 136) or Lassar's paste (No. 2, p. 43) is useful. In bad cases the resorcin-salicylic-sulphur paste (No. 42, p. 100) or the tannin-sulphur paste (No. 50, p. 108) should be applied until peeling occurs. The salicylic-sulphur paste (No. 79, p. 153) has done me good service in some cases. The combination of 1 or 2 per cent. of the oleate of mercury with simple ointment is also efficacious.

In all the severer cases removal of the hairs becomes necessary. This can be readily effected without pain, as soon as suppuration has loosened the hair, by means of the epilating forceps (Fig. 22, p. 51); one hair is seized at a time, and removed by a sudden sharp traction. The hair-root and -sheath are infiltrated

with a multitude of pus-cocci; epilation removes them and opens the follicle for the exit of pus and for the entrance of medicaments. It must be systematically carried out, together with the other treatment; in most cases it is sufficient to remove all the hairs seated in pustules once or twice a week.

4. INFLAMMATIONS OF THE NAILS.

The nails are non-vascular structures, and the inflammatory processes that affect them take place in the nail-bed, the falx, and the matrix; the nail itself being only secondarily involved. The process may be primary and idiopathic, or it may occur secondarily to inflammatory or parasitic diseases of the general integument.

ONYCHIA.

Inflammation of the nail-bed occurs rarely as an idiopathic affection, as from traumatisms; more frequently it forms a part of other inflammatory skin affections, such as psoriasis, eczema, the syphilodermata, etc. The nails become thickened, lusterless, and furrowed, and the nail-bed becomes inflamed and tender. The appearance of the affected nail itself is rarely characteristic, and we must usually rely upon the symptoms of disease that are generally present at other points for the diagnosis. The treatment should consist in the removal of the cause, where that is ascertainable, the relief of tension by incisions, or possibly by the removal of the nail, followed by an iodoform or boric-acid dressing. The further treatment is that of the underlying disease.

Onychia maligna is a chronic or acute inflammation of the nail-bed occurring in debilitated and cachectic individuals, more especially in children affected with chronic inflammations of the glands or mucous membranes (so-called scrofulous or strumous individuals). It is possibly due to a local tubercular infection. The nail is thickened, opaque, discolored, and raised from its bed; the matrix and falx are inflamed, and suppuration may occur; and after the nail is loosened or cast off the bed undergoes an ulcerative or granular inflammation. The affection is very painful, and several nails, either at one time or consecutively, are usually involved. The nails are usually lost, and are replaced either by a deformed and irregular organ, or by cicatricial tissue; occasionally the whole phalanx is destroyed. The local treatment consists in the removal of the nail and the treatment of the affected area by general surgical measures, together with tonic treatment.

Paronychia, whitlow, inflammation of the tissues around the nail-bed, occurs occasionally spontaneously from excessive growth of the nail, but is more commonly caused by pressure, as of improper footwear. One of the upper angles of the great toe-nail is usually affected. Hypertrophy of the nail is generally present, and will

be considered under its appropriate heading. The treatment consists in the relief of pressure, the repression of exuberant granulations with the nitrate-of-silver stick, the use of sedative or astringent ointments, iodoform, etc. (No. 29, p. 74, No. 34, p. 113, Nos. 68, 69, p. 135). If ingrowing toe-nail is present, it must be appropriately treated.

ONYCHOMYCOSIS.

All the parasitic affections of the nails look so much alike that they may be considered under one heading. The nails lose their gloss and become spotted and dirty yellow; they are ridged, furrowed, and brittle. The prognosis as to the preservation of the nail in bad cases is doubtful. In favus the anterior ends become thickened, and chip or split off, and dust-like masses of parasite are visible under them; but the diagnosis here also must be made from the presence of the disease elsewhere, since in the nail itself the fungus is difficult to demonstrate. The frequent use of hot water, green soap, and a stiff brush is useful in all cases. The treatment for ringworm of the nails consists in thorough scraping, followed by the application of sulphurous acid or the hyposulphite of soda (1 to 4 of water) on lint covered with oiled silk. In favus the nails may be soaked in a warm 40-per-cent. solution of caustic potash, and then scraped, and a parasiticide ointment applied (No. 74, p. 138, No. 37, p. 82, etc.). The 1-per-cent. sublimate collodion is also useful.

CLASS IV.

HYPERTROPHIES.

IN this class of dermic changes the cells of the whole or of certain elements of the skin are increased in number. The epidermis alone may be affected, as in callositas; the papillæ may be also involved, as in warts; the pigment may be increased, as in chloasma; the hair may be multiplied, as in hypertrichosis; or the connective tissue may be chiefly involved, as in elephantiasis.

1. HYPERTROPHIES OF THE EPIDERMIS.

These may be congenital or acquired, general or local, and include ichthyosis and keratosis, callus, callositas, clavus, verruca, cornu cutaneum, and the acuminate condyloma.

ICHTHYOSIS.

Synonyms.—Xeroderma, lichen pilaris, keratosis pilaris, fish-skin disease, *Fischschuppenkrankheit* (Ger.), *ichthyose* (Fr.).

Definition.—A congenital deformity of the skin, characterized by dryness and scaliness of the epidermis, and sometimes by horny, acuminate papules, plates, or larger warty masses.

Symptoms and Course.—Ichthyosis is a deformity and not a disease. In its commonest and mildest form (xeroderma) the skin is rough, dry, slightly thickened, and its natural furrows are exaggerated; it is pearly white in color, and its surface is covered with a slight furfuraceous desquamation. The change may be so slight as to be discovered only accidentally. In some cases the epithelial accumulation occurs mostly around the hair-follicles, giving rise to small, acuminate, horny masses either surrounding a hair or containing a small curled-up hair within them (lichen s. keratosis pilaris). A somewhat severer form is known as ichthyosis simplex, in which the epithelial formation is so rapid that the scales accumulate as polygonal, dry, white or pearly scales or plates, giving the surface a tes-

sellated appearance (ichthyosis serpentina). Here the color is darker and may even be brownish or greenish black. The scales are attached with moderate firmness, but they can be removed without causing bleeding. The nails are friable and thickened, and the scalp is scaly, as in seborrhea.

Ichthyosis hystrix is rare, and is rather a distinct form than an advanced stage of the preceding. Here the corneous scales accumulate to form rough, irregular, heaped-up masses of tissue, spines, or larger warty eminences, projecting half an inch or more above the surface, and yellow or brownish black in color. The scales and masses are occasionally shed, as if by a process of moulting; but they soon reaccumulate. Extreme instances of the deformity pose as curiosities under the name of porcupine or hedgehog men; the Lambert family was a notable example during the last century, three generations having been affected. Ichthyosis congenita commences in intra-uterine life. The children are born small and puny, the entire body being covered with horny plates and scales, traversed by deep fissures, and looking like a covering of armor. The growing fetus has split and fissured the resistant integument; the lips, eyelids, and external ears are wanting, and the fingers and toes are cramped and bent by the unyielding skin. These cases live only a few days, dying from the loss of heat, impossibility of suckling, etc.

Ichthyosis may extend over the entire skin, or it may be localized; but the extensor surfaces of the limbs are always most affected, and the deformity may be present in these locations only. The backs of the hands and feet are often involved, as are also the thighs, shoulders, and trunk. The face, palms, and soles are often free. In bad cases, however, ectropion and deformity of the lips ensue from the unyielding texture of the skin. The simple forms are usually more or less general, but ichthyosis hystrix is rarely symmetrical, and the lesions often follow the track of the cutaneous nerves.

A marked feature of the disease is the diminution in the secretion of both the sebum and the sweat. Yet the general health of these patients is good even in advanced degrees of the affection. As a rule no sign of it is visible at birth, but it appears during the first or second year, showing first at its points of election, the elbows and knees. It gradually advances until puberty is reached, at which time there is often a marked increase in its severity; and thereafter it is but little subject to change. It improves in summer, when the sweat-glands are more active, and gets worse in the winter.

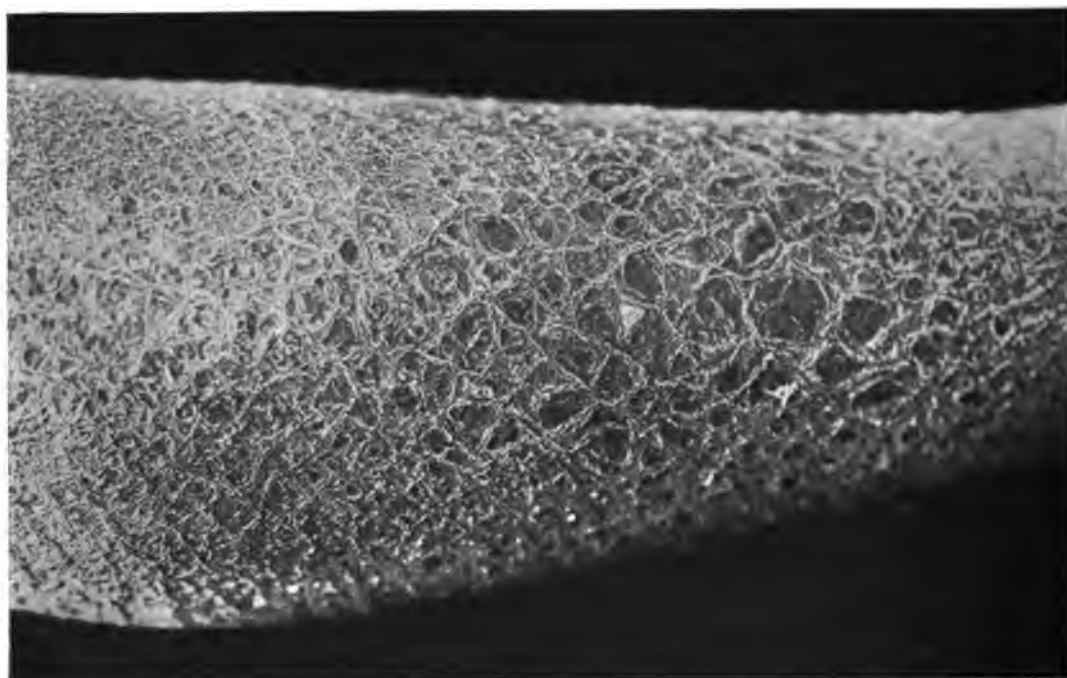
Etiology.—Ichthyosis is a congenital deformity, the real cause of which is entirely unknown to us. It is often hereditary, either in the direct line, or in alternate generations, or by a collateral branch; sometimes one sex only in a family is affected. It is very common in Paraguay, and in the Moluccas 5 per cent. of the male population is said to show its manifestations.

Pathology.—The process is a true hyperkeratosis. Robinson found the corneous layer hypertrophied, consisting of many superimposed layers of cells, and the



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KERATOSIS PILARIS.



TYPOGRAPHY.

ICHTHYOSIS.

sebaceous glands imperfectly developed; the other elements of the skin were unaffected. The dark color of the scales is due to increased pigment formation and extraneous particles. In ichthyosis hystrix the papillæ are surmounted by dense epidermoidal cones.

Diagnosis.—This hardly ever presents any difficulties. The hereditary history and the development soon after birth; the dry, rough, furrowed skin of xeroderma; the horny papillæ of keratosis pilaris; the plates and scales of simple ichthyosis; and the warty outgrowths and more extensive keratoses of the hystricoid form, are characteristic. The absence of inflammatory symptoms and of the peculiar primary lesions will serve to distinguish the disease from psoriasis, lichen planus, etc.

Prognosis.—This is bad as to cure, but the general health remains unaffected. Cases other than the very mildest can only be relieved.

No. 123. Resorcin Ointment No. 2.

R̄ Resorcin. albiss. 2 parts
Ungt. simplicis. ad. 100 "

No. 124. Salicylic-acid Ointment.

Ac. salicyl. 2 parts
Petrolati ad. 100 "

No. 125. Naphthol Ointment.

R̄ β-naphthol 5 parts
Solve in spir. vini rectific. q. s.
Petrolati ad. 100 "

Treatment.—This can be merely palliative in almost all cases. Good results have been claimed from the use of pilocarpine given subcutaneously in $\frac{1}{3}$ -grain doses, and arsenic may be tried; but internal treatment is of little avail. Continuous local treatment may do much to render the patient's condition a more tolerable one. A daily hot bath, alkaline or bran (p. 41), preceded by frictions with green soap, should be prescribed. After that an oleaginous or other emollient preparation should be used, and for that purpose linseed, olive, benne, or any other oil may be employed. Cod-liver oil is very good, though slightly objectionable on account of its odor; in very mild cases a glycerin lotion, 1 to 10, is quite sufficient. After the scales are removed severer cases require a 2-per-cent. resorcin or salicylic-acid ointment (Nos. 123, 124, p. 243). Kaposi recommends naphthol, either alone (No. 125, p. 243) or with green soap (No. 37, p. 82). In localized forms of ichthyosis the resorcin or salicylic-acid collemplastra may be employed. In ichthyosis hystrix the warty growths may be curetted, or they may be removed by means of a saturated solution of salicylic acid in alcohol; then one of the above ointments should be used. The treatment selected must be persisted in indefinitely.

KERATOSIS PILARIS.

Synonyms.—Pityriasis pilaris, lichen pilaris.

Definition.—An accumulation of corneous cells at the orifices of the hair-

follicles, forming numerous minute grayish- or pinkish-white acuminate hard papules.

Symptoms and Course.—Keratosis pilaris appears as pinhead-sized, hard, conical papules situated at the orifices of the hair-follicles. Their color is similar to that of the skin, or pinkish or grayish white. The hair of the follicle pierces the papule, or is broken off level with its apex, appearing as a minute dark point, or is coiled up among the epithelium-cells. The extensor surfaces of the limbs, more especially of the thighs and arms, are the usual site of the disease; but the trunk is occasionally involved. In bad cases the skin feels like a nutmeg-grater and is fairly studded with the conical grayish horny prominences. Sometimes the malady occurs in conjunction with xeroderma or ichthyosis. It occasions no subjective symptoms.

Etiology.—The affection occurs most frequently in persons more or less subject to ichthyotic deformity of the integument, and heredity is undoubtedly influential in determining its appearance. Personal uncleanness naturally increases the tendency to the accumulation of epithelial detritus upon the skin, and intensifies the condition.

Pathology.—The papules are accumulations of cells of the horny layer of the epidermis, mixed with a little inspissated sebum. The mass is seated in a minute depression around the orifice of the hair-follicle, from which it can be shelled out.

Diagnosis.—Its seat upon the extensor surfaces of the limbs, and the characteristic minute acuminate horny papules at the mouths of the hair-follicles render keratosis follicularis readily distinguishable. Ichthyosis is not limited to the hair-follicles, and the entire absence of inflammatory symptoms will serve to distinguish the affection from a papular eczema.

Treatment.—This is essentially the same as that of the milder forms of ichthyosis. Alkaline, vapor, and hot baths, the free use of soft soap and the flesh-brush, together with inunctions of the various bland oils, will keep the process in abeyance and will sometimes cure it.

CALLOSITAS.

Synonyma.—Tyloma, keratoma, callus, *Schwiele* (Ger.).

Definition.—A localized thickening of the corneous layer of the skin, gradually sloping down to the healthy integument.

Symptoms and Course.—Callositas is rare as a congenital condition, being usually acquired on parts exposed to intermittent pressure or to friction, more especially over the various bony prominences. It appears as a finger-nail-sized and larger biconcave lens-shaped mass, seated in a depression of the epidermis. It is semi-transparent, and of a dirty grayish- or brownish-white color; the normal folds of the skin are obliterated and the tactile sensibility is lessened. Rhagades, inflammatory processes, and suppuration not infrequently occur, and complete exfoliation may take place.

The size, number, and location of the callosities vary with their cause, are more

or less characteristic of the different occupations that occasion them, and are sometimes essential to work. Thus they are found upon the hands of mechanics, more especially of metal-workers and shoemakers; on the hands of musicians at the places that come in contact with the strings; on the soles of the feet of those whose occupations compel them to stand or walk much, or who wear ill-fitting shoes; and on the body from the pressure of trusses and other apparatus. Though essentially protective, they may occasion discomfort from the pressure of the mass upon the deeper layers of the derma, the fissuring or the inflammatory action in the surrounding tissue, and the interference with the tactile sensibility; they may even interfere with the patient's vocation, or render walking impossible.

Etiology.—Long-continued and intermittent pressure is the usual cause of callosities; more rarely they are due to the action of some chemical agent, lye, etc. In some cases the cause is not to be ascertained.

Pathology.—A callosity is a simple increase in the corneous layer of the skin, the cells of which are more coherent than usual. There is a depression of the deeper tissues at the site of the tumor, but otherwise they are entirely normal.

Diagnosis and Prognosis.—The diagnosis never presents any difficulties. The prognosis as to recurrence after removal is good; but it must be remembered that in many cases the formation of the callosity is conservative, protecting the deeper structures from mechanical injury, and is necessary in the patient's occupation.

No. 126. Salicylic-soap Ointment.

Rx Ac. salicyl. 3 parts
Sapon. virid.
Petrolati aa. 5 "

No. 127. Salicylic-Cannabis Collodion.

Rx Ac. salicyl. 10 parts
Extr. cannabis indic. 1 part
Collod. flex. 100 part



FIG. 122.—Callositas.
From photograph by the author.

Treatment.—The protective callosities must not be interfered with. In other cases the cause must be removed, proper shoes must be worn, and the local injuries that cause the development of the epithelial overgrowth must be avoided as far as possible. Soaking with hot water, maceration with oil, green-soap frictions, or poulticings are useful to soften the thickened epidermis and facilitate its removal. The mass can then be shaved off with the scalpel, the 20-per-cent. salicylic plaster-mull, the 10-per-cent. salicylic collodion, the salicylic-cannabis collodion (No. 127, p. 245), the salicylic-soap ointment (No. 126, p. 245) being afterward employed. Pure salicylic acid can be sprinkled over the surface, and the callosity then covered with gutta-percha paper and plaster. These measures will after a time transform the thickened corneous layer into a swollen soft white mass, which can be removed from the underlying tissue without trouble. Inflamed or suppurating callosities must be poulticed, to promote the separation of the cornified tissue.

CLAVUS.

Synonyms.—Corn, *Hühnerauge*, *Leichdorn* (Ger.), *cor* (Fr.).

Definition.—A circumscribed callosity, usually situated upon the toes, and provided on its under surface with a conical spur of corneous tissue fitting into a depression in the corium.

Symptoms and Course.—A corn is a circumscribed, grayish-white, hard or soft hypertrophy of the epidermis, with one or more projections from its lower surface. It is usually situated over a bony prominence, more especially upon the toes and the soles of the feet; more rarely it occurs upon the hands. It varies in size from a small pea to a chestnut. On the exposed surfaces its texture is dense; but under the influence of heat and moisture, as between the toes, it becomes macerated and soft. Corns are painful from the pressure exerted by the projecting spur upon the sensitive papillæ and corium, and are also sensitive to weather-changes.

Etiology.—Corns are almost always due to pressure and friction from the use of improper footwear.

Pathology.—The corneous layer at the affected place is increased, the epithelial cells being more coherent than normal, and arranged in superimposed and sometimes concentric layers. The corium is thinned and atrophic from the pressure of the downward-projecting mass. Bursæ frequently form between the lower surface of the corn and the bone beneath.

Diagnosis and Prognosis.—Removal of the corn is easy; but pyemia has occasionally followed operative interference with these growths, most probably from the opening of the bursa that are formed underneath the corn in the absence of proper antiseptic precautions.

Treatment.—This is essentially the same as for callositas. Prophylaxis consists

in the wearing of proper footwear and the removal of pressure from the part by the use of concentric rings of plaster. The hypertrophic tissue can be removed with the knife or the curette after softening it with hot water or oil; but operative interference is rarely necessary. Duhring recommends the use of a 4- to 8-per-cent. caustic-potash solution, after carefully protecting the surrounding parts with rubber plaster. The salicylic-cannabis collodion (No. 127, p. 245) is the most useful application in ordinary cases; it should be painted over the corn several times daily for a week, at the end of which time the hypertrophied mass can be easily picked off. Soft corns can be removed by the use of the ointment of the nitrate of mercury or the nitrate-of-silver stick. Inflamed and suppurating corns must be poulticed until the hypertrophied mass comes away.

CORNU CUTANEUM.

Synonyms.—Cutaneous horn, *Hauthorn* (Ger.), *corne de la peau* (Fr.).

Definition.—A circumscribed hypertrophy of the epidermis, forming a various-sized and -shaped excrescence.

Symptoms and Course.—Cutaneous horns are epithelial proliferations that project outward from the skin, forming cylindrical or pyramidal horny eminences. Their color is yellowish brown or greenish or blackish; their texture generally hard, and laminated or fibrillated; and their shape is straight or curved. They are of very rare occurrence, and usually one only is present; but sometimes there are several, and Hesch has described one case in which there were sixteen of these growths. They are usually small, the largest I have seen being 1 inch in size; but they have been found of a size of 10 inches and more. They have been most often seen upon the face, scalp, and hands, and occasionally upon the genitals; and I have seen one upon the sole of the foot. As a rule they fall off spontaneously after attaining a certain size; and in a considerable proportion of cases they finally undergo malignant degeneration and develop into carcinomata.

Etiology.—We are ignorant of the cause of these outgrowths, though some of



FIG. 123.—Cornu cutaneum.
From photograph by the author.

them have been ascribed to the presence of syphilis and to the long-continued use of arsenic. They appear in old age, and sometimes grow from senile warts, sebaceous cysts, and ordinary scars.

Pathology.—Cutaneous horns are really overgrown warts; for, in addition to the presence of hypertrophied epithelium arranged in concentric layers, the rete is thickened and the papillæ are enlarged.

Diagnosis and Prognosis.—The former is apparent; and the latter is good, save for the possible development into epithelioma, which, according to Lebert, takes place in 12 per cent. of the cases.

Treatment.—This consists in the removal of the growth, either by means of an elliptical incision through the integument at its base, or by the curette. In either case the raw surface should be thoroughly cauterized afterward.

CONDYLOMA ACUMINATA.

Synonyms.—Moist or venereal warts, *Spitzencondylom* (Ger.), *végétations dermatiques* (Fr.).

Definition.—Pointed or branched excrescences, usually situated on the mucous membranes or skin near the genito-anal openings, and composed of hypertrophied papillæ.



FIG. 124. — Condyloma acuminata.
From photograph by the author.

Symptoms and Course.—Venereal warts appear as one or more isolated papillary or branched excrescences, or as larger confluent, cauliflower- or raspberry-like masses. When seated on the ordinary skin they are dry and flesh-colored; but when they are exposed to warmth, moisture, and the pressure of contiguous surfaces they are soft, reddish or purplish in color, and covered with an ichorous, foul-smelling discharge. Their commonest seat is around the genitals, and they not infrequently appear on the corona and the perineum in the male; their most luxurious

development, however, is attained on the labia and around the anus in the female. They are also found in the submammary region, on the axilla and the umbilicus, and between the toes. They grow rapidly and luxuriantly under favorable conditions, and show no tendency to spontaneous involution.

Etiology.—Irritation from gonorrheal secretion is their commonest but not their only cause; they occur in connection with leucorrhea and balanitis, and sometimes when there is uncleanliness only. They are probably contagious, for not only are contiguous surfaces commonly affected, but I have met with several instances in which husbands and wives have both suffered from them. Micro-organisms of various kinds have been described by Cornil, Fühnemann, and others; but as yet we have no certainty of their etiological relationship to the growths.



FIG. 125.—*Condyloma acuminata*.
From photograph of one of the author's patients.

Pathology.—The corneous layer and the rete are both hypertrophied; the papillæ are enormously enlarged and contain greatly dilated blood-vessels.

Prognosis.—This is good if appropriate treatment is instituted. The condylomata last indefinitely if left to themselves.

No. 128. Iodoform-Tannin Powder.

R̄ Iodoformi
Ac. tannic. āā. p. e.

Treatment.—Strict cleanliness of the parts and the prevention of contact with irritant discharges are necessary in all cases, and suffice for the cure of the milder ones.

Sprinkling the surface with an astringent powder (No. 18, p. 61) or with iodoform and tannin (No. 128, p. 249) does very well; the salicylic dusting powder is more efficacious (No. 14, p. 58). Contiguous surfaces must be kept apart with cotton, bandages, etc. Chromic or carbolic acid may be employed in obstinate cases. Occasionally it is preferable to snip the growths off with the scissors, the liquor ferri sesquichloridi or carbolic acid being used afterward. The galvanocautery or electrolysis (p. 49) may also be used.

VERRUCA.

Synonyms.—Wart, *Warze* (Ger.), *verruë* (Fr.).

Definition.—Various-sized, hard or soft, papillary or flat elevations of the skin, due to a localized hypertrophy of the papillæ and epidermis.

Symptoms and Course.—The so-called congenital warts are hairy and pigmentary growths belonging to the class of the *nævi*; we shall consider here only the common and the senile wart.

Verrucae vulgares are small pinhead- to bean-sized, circumscribed growths projecting above the surface of the skin, and firmly seated on broad and slightly indurated bases. They may be single or multiple; they are usually isolated, but are occasionally found grouped into larger confluent masses. Their shape is conical or flat; and their dry and horny surface is often cleft and furrowed, giving to their tops a brush-like appearance. Their color is at first that of the skin, but later it becomes brownish or even blackish, from the accumulation of dirt in the interstices of the horny layer. Their seat is usually on the hands, more especially upon the fingers, but they occur also upon the toes, trunk, face, and scalp. They grow quickly or slowly; they may persist for an indefinite time, but they sometimes drop off spontaneously. They are seen in young individuals, and most commonly in males.

Verrucae seniles s. *planæ* are soft, smooth, and usually flat excrescences that appear on the face and the back of the aged. They vary in size from that of a pea to that of a finger-nail, and they are usually of a dark-brown or blackish color.

Etiology.—The cause of ordinary warts is unknown; the microorganisms that have been described have not been proved to be pathogenetic. There seems to be some ground for the popular belief in their contagiousness and auto-inoculability. The senile warts are an expression of the general tendency of the epithelial tissues to hypertrophy late in life.

Pathology.—There is a localized hypertrophy of the papillæ, enlargement of the capillary loops within them, and an enormous increase in the superincumbent corneous layers.

Diagnosis.—This is of importance only with the senile warts, as regards their



VERRUCA.



TYPOGRAPHURE.

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ALOPECIA AREATA.

PLATE L.

differentiation from epitheliomata. A tendency to ulceration or papillary outgrowth is suspicious in a senile wart; and the presence of an indurated base, and any trace of a hard, waxy, shining border with dilated vessels running over it, is conclusive as to the presence of carcinomatous degeneration.

Prognosis.—Ordinary warts are important only from a cosmetic point of view; they do not return if their bases are thoroughly destroyed after removal. The senile warts are of importance in that they are not infrequently the starting-point of cutaneous cancer.

No. 129. Sublimate Collodion.

| | | | |
|--------------------------|---|---|----------|
| Rx Hydrarg. chlor. corr. | . | . | 1 part |
| Collod. flexile | . | . | 10 parts |

Treatment.—This is entirely local. Various means may be employed; but care must be taken in their selection not to cause unnecessary destruction of tissue. I prefer electrolysis, the base of the wart being punctured in various directions with a fine needle connected with the negative pole of the galvanic battery, and a current of 1 to 4 milliamperes being passed through it for a few minutes. If care is taken to transfix and destroy the base of the growth, the wart drops off in a few days, leaving only a reddened surface and hardly any scar behind. (See p. 49.) The growths may be cut off with the scissors, or scraped out with the sharp curette, their bases being afterward cauterized with nitric acid, the acid nitrate of mercury, or pure carbolic acid. The galvanocautery or the Paquelin may also be employed. Even these minor surgical procedures are often unnecessary. Painting the wart repeatedly with sublimate collodion (No. 129, p. 251) will cause it to drop off. The 20- to 40-per-cent. salicylic-acid plaster-mull, the salicylic-cannabis collodion (No. 127, p. 245), or the salicylic-acid ointment (No. 124, p. 243) will destroy the epithelial coating, and the bases of the growths can then be cauterized with chromic or other acid.

2. HYPERTROPHY OF THE CONNECTIVE TISSUE.

Under this heading we shall consider only elephantiasis Arabum, a malady formerly confounded with leprosy.

ELEPHANTIASIS.

Synonyms.—Elephantiasis Arabum, pachydermia, Barbados or elephant leg, *éléphantiasis* (Fr.).

Definition.—A chronic localized hypertrophy of the skin and subcutis, caused by circulatory disturbances due to repeated attacks of inflammation or to embolism by the *Filaria sanguinis* or its ova, and appearing as enlarged, thickened, indurated, and pigmented areas of skin.

Elephantiasis Græcorum is leprosy; and nævus and other conditions often called elephantiasis belong under angioma, lymphangioma, fibroma, etc.

Symptoms and Course.—Elephantiasis begins with a series of inflammatory or erysipeloid attacks, usually affecting the entire integument of an extremity, and commencing in a local lesion, a wound, or a scar, or in apparently healthy tissue. Lymphangitis and phlebitis are frequent concomitants; the lymphatic vessels become thickened and hardened, and the lymphatic glands swollen and tender. The attacks occur at irregular intervals; and each one leaves the skin somewhat more swollen, and the vessels and glands somewhat larger and harder. After months or years they cease to occur, and the morbid process stops; but the patient is left with a permanently deformed part, in which all the tissues of the skin are hypertrophied, and in which the fasciæ and muscles, and even the underlying bones, may be affected. The enlargement is often enormous; the integument is rugose and warty (elephantiasis verrucosa, tuberosa, papillosa), or smooth and shiny (elephantiasis glabra). The enlarged lymphatics not infrequently rupture, and a permanent trickling of the fluid, a lymphorrhea, is set up; and eczema and ulcerations of varying depth not infrequently complicate the process.

The commonest location of the disease is on the legs, and not infrequently one limb is affected alone or more severely than the other. The entire extremity is more or less swollen from the sole of the foot to the middle of the thigh, the natural contours are obliterated, and the surface is covered with irregular masses of indurated tissue firmly bound down to the subjacent parts. The integument may be dry and shining; but, as more or less epidermic hypertrophy usually accompanies the process, it is often deeply pigmented, scaly, and covered with seborrheal and epithelial detritus. Most often, however, the surface is dry, horny, and irregularly tuberculated, with a foul secretion in the interstices of the warty excrescences. Excoriations, dirty-based ulcerations, and eczematous processes are usually present to a greater or less extent. The skin may be 1 to 2 inches thick, and the underlying tissues may be hypertrophied even to the bones.

Elephantiasis of the genitals is less common. The scrotum may attain an enormous size and the penis disappear entirely in a funnel-shaped orifice. Alpin and Larrey record a case in which this organ weighed 120 pounds, and others have been noted in which the tumor reached below the knees and even to the ankles. In the female the labia are most often affected, and the ostium vaginæ and the clitoris are obliterated. The skin over these tumors is usually rough, hard, and tuberculated, and more or less deeply pigmented. In other locations the disease is very rare, though it has been seen on the upper extremities and on the ears.

Elephantiasis usually begins in adult life, and has rarely been seen in children. The subjective symptoms are not marked. The inflammatory attacks are painful, and later there is permanent discomfort from the tightness and "dead" feeling of the skin. In advanced cases locomotion is interfered with or rendered impossible,



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ELEPHANTIASIS ARABUM

PLATE XXXVIII

and not the least of the sufferings of the patients affected with elephantiasis of the genitals is the fact that it prevents the gratification of the sexual appetite. The malady is common in the tropics, but occasional cases are seen here.

Etiology.—Chronic lymphatic stasis is the immediate factor that causes the development of elephantiasis, and the obstruction may be due to a variety of causes.

Long-standing inflammatory processes affecting the lymphatic glands and leading to connective-tissue hyperplasia, and inflammatory affections of the skin, eczemas, erysipelas, syphilitic and lupoid ulcerations, together with the pressure of tumors and cicatrices, are the causes of the sporadic cases met with in the temperate zones. The cases that occur endemically in the tropics have been proved by Manson, Silva Araujo, Cobbold, and others to be due to the presence in the fluids of the body of the *Filaria sanguinis hominis* and its embryos. These are readily found in the chylous urine and the lymph, but swarm in the blood only in the night-time. During that time they are absorbed by the mosquitos, in whose bodies they pass the intermediate stage of their existence. In about three days the insects die, and, by bathing, or through the drinking-water, are taken into the human body again. The presence of the parasite and its embryos in the lymph-channels and -glands obstructs the lymphatic flow and leads to the hypertrophy.



FIG. 126.—Elephantiasis vulvæ.
After Van Haren-Noman.

Pathology.—The lymphatic vessels and the veins are enormously dilated, and the tissues are saturated with lymph. All the elements of the skin are more or less hypertrophied from the presence of new connective tissue, but the greatest change is in the subcutis. Even the muscles are enlarged, and the bones show new osteophytic growth. All the glandular structures are more or less atrophied.

Diagnosis.—This is readily made from the enormous enlargement of the part,

the firm œdema, the papillary outgrowths, lymphorrhea, etc., and there is no other malady with which it is liable to be confounded.

Prognosis.—The prognosis as to cure is bad, though the malady does not endanger life. The interference with motility and work is very serious. The difficulties of sexual congress when the genitals are affected have already been adverted to.

Treatment.—Prophylaxis consists in the treatment and cure of all conditions causing venous and lymphatic stasis of the lower limbs or genitals, eczema, simple or specific ulcerations, lupus, etc., and the removal of mechanical obstructions, scars, tumors, etc., to the lymphatic flow. The direct treatment of the condition is not hopeful, since neither local measures nor internal remedies will remove the new-formed connective tissue. Rest in bed, with elevation of the limb, together with the use of rubber or other bandages, may do good in the beginning. In advanced cases excision of the hypertrophied tissues or amputation of the part may be advisable; but the course of the wound is a very uncertain one. Other measures, such as the ligation of arteries, the excision of nerves, the use of galvanism, etc., have given no satisfactory results.

3. HYPERTROPHY OF THE SEBACEOUS GLANDS.

This hardly occurs as a distinct affection. We include molluscum contagiosum under this heading; for though it is probably not a sebaceous-gland hypertrophy, as was formerly supposed, it is best considered here.

MOLLUSCUM CONTAGIOSUM.

Synonyms.—Molluscum sebaceum, epithelioma molluscum, *acné varioliformis* (Fr.).

Definition.—An affection characterized by the appearance on the skin of small, semi-transparent, flesh-colored, wart-like or globular, umbilicated tumors.

Symptoms and Course.—Molluscum contagiosum begins with the appearance of one or more minute, slightly prominent, transparent, shining whitish nodules, which slowly grow into pea-sized or larger sessile or pedunculated tumors. Their surface is usually smooth; their color is that of the normal skin, the stretching of the epidermis over their tops giving them a faint whitish, waxy glance; and they are sometimes situated on slightly reddened bases, though the skin around them is perfectly normal. Their flattened summits are marked with a slight but distinct depression, to which is due the French designation of the disease; and in the center of this the small opening into the mass can almost always be seen. Though moderately firm to the touch, their contents can be expelled by pressure, and form a greasy or tallo-like mass containing the peculiar bodies known as molluscum corpuscles. The

tumors grow very slowly and may be present for months or years. They may disappear spontaneously in time, or be destroyed by inflammatory processes, supuration, or ulceration. They may be single, but are usually multiple, and in some cases large numbers are present. Their commonest seat is upon the face, and next commonest upon the genitals and hands; but they are occasionally found on other portions of the body. The malady is commoner in children than among adults.

Etiology.—The molluscum corpuscles are oval- or lemon-shaped bodies which have been identified by some observers with parasites belonging to the *Coccidia* subclass of the *Sporozoa* (Bollinger and Neisser), but are regarded by others as peculiarly modified and swollen rete-cells (Lesser, Israel, Kromayer, etc.). The facts that several cases sometimes occur in one family, that parts that are liable to be brought in contact are their usual seat, as well as the direct and successful inoculation experiments of Haab and Pick, sufficiently demonstrate their contagious nature.



FIG. 127.—Molluscum contagiosum.
From photograph by the author.

Pathology.—The tumors are composed of densely packed lobular masses containing epithelial detritus, fat-globules and -crystals, and the above-mentioned peculiar corpuscles. It is a question whether the lobules are the remains of sebaceous glands or not, for the process seems to start in the rete.

Diagnosis.—The tumors situated on normal non-inflamed skin, with central depressions and expressible, semi-solid contents, and containing the molluscum corpuscles, are characteristic. In milium the nodules are small and flat, yellowish white or brown in color, with no central opening and with tallowy contents. Fibroma molluscum is a solid new growth, with no central opening and no expressible contents, and resembles the contagious molluscum only in its name. In variola the fluid contents of the vesicles and the fever and course of the disease will prevent mistake.

Prognosis.—This is invariably good; the tumors may end spontaneously, and in any case they can be readily removed.

Treatment.—Mollusca are readily removed by expression, more especially after an incision has been made to facilitate the extrusion of the mass. The curette may also be employed. It is not necessary to cauterize the sac.

4. HYPERTROPHY OF THE HAIRS.

This may be quantitative, an increase in number, or qualitative, an increase in size or length of the appendages. Both conditions may be considered under the next heading.

HYPERTRICHOSIS.

Synonyms.—Hirsuties, hypertrichiasis, polytrichia.

Definition.—An increase in the size or the amount of the hair, or its growth in unusual locations.

Symptoms and Course.—An abnormal growth of the hair occurs only where hair-follicles are normally present, and is never seen on the palms and soles, the dorsal surfaces of the terminal phalanges, or on the lips. Excessive length and thickness of the stiff hair in normal situations is not uncommon. Beigel records one case where the hair was 9 feet long, and Leonard one where the beard measured 7 feet. Similar growth of the hair of the eyebrows, pubes, and axillæ, as well as of that on the trunk and limbs of males, is often seen. A hairy growth, normal in the male, becomes hirsuties in the female, and is usually associated with some disorder of the generative organs. Examples of bearded women are exhibited as curiosities; and I have had one under my care whose beard was heavier than that of the average man, and whose husband shaved her daily. Females occasionally have hair on the breast or around the nipple, and a line of hair extending from the pubes to the umbilicus, as in the male. In both sexes long hair is occasionally found in locations usually covered only with the fine down of the lanugo, as the small of the back and the extensor surfaces of the limbs. Cases in which the normal hairy growth appears too early on the face and around the genitals are usually accompanied by precocious sexual development. Beigel has recorded one of a girl of six, whose pubic hair was as long and vigorous as that of an adult. Again, hirsuties frequently occurs on the chin of females after the menopause. Irritation, as from blistering, the use of stimulating applications, the pressure of bandages, may cause similar local hypertrichosis.

Unusual growth of the fine lanugo hair that covers the surface of the body almost everywhere occurs in cases of universal hirsuties. Such were the well-known Shwe-Maon family, in which the anomaly was observed by Beigel and Crawford during three generations, and the Russian Andrian Leftichjew. Here the downy hair develops into a soft brown or blond growth an inch or more in length, usually

most pronounced upon the face. Deficient development of the teeth is present in most of these cases.

Etiology.—General hypertrichosis of the lanugo hair is usually hereditary, and is to be regarded as a defect of development, and a persistence of the fetal hair that is usually shed before or soon after birth. The same condition of the ordinary hair is generally a race or family characteristic, and is commoner in persons of dark complexions. Partial hypertrichosis may be caused by the increased nutrition due to the long determination of blood to a part, as by the persistent use of sinapisms, liniments, etc., or by perverted, precocious, or arrested activity of the sexual functions. The hirsuties of the lumbar and dorsal regions is sometimes connected with a concealed spina bifida. In many cases, however, the cause of the hypertrichosis is entirely obscure.

Pathology.—The abnormal growth does not differ in structure from that of the ordinary amount and in the usual situations.

Diagnosis.—Hairy nævi may be confounded with localized hypertrichoses; but the unchanged texture and color of the skin should readily distinguish them from the latter, which are usually pigmented and hypertrophic.

Prognosis.—The abnormal hairs are readily removed temporarily. Permanent removal depends on the possibility of the destruction of the hair-papillæ, and this, being very slow and troublesome, cannot be done where very large surfaces of the skin are affected, or where there is a general overgrowth of the lanugo hair. I have, however, removed over 14,000 hairs from the face of a woman in the course of two years, with a finally satisfactory result.

No. 130. *Duhring's Depilatory.*

| | | | | | |
|---|-----------------|---|---|-------|---------|
| R | Barii sulphidi | . | . | . | 2 parts |
| | Pulv. zinci ox. | | | | |
| | Pulv. amyli | . | . | āā. 3 | " |

Treatment.—Extraction with the forceps is not much better than shaving; the papillæ are left behind, and the hairs grow again in a short time. The same may be said of depilatories, though they do destroy the shaft of the hair down to its neck. Perhaps the best of them is the combination recommended by Duhring (No. 130, p. 257). It should be made into a thin paste with water, applied for ten or fifteen minutes, and scraped off as soon as burning is felt, and cold cream applied. Those containing arsenic are dangerous, and they all stimulate the growth of the lanugo hair more or less. The only radical and satisfactory treatment is by electrolysis, which we owe to Michel and Hardaway, of St. Louis. The method will be found described in detail on page 49. Much patience is required if the growth is at all extensive. The operation is uncomfortable, but not really painful, and a 20-per-cent. cocaine-adeeps lanæ ointment may be applied before the electrolysis, to mitigate

it. Removal of lanugo hairs should never be attempted; the remaining hairs are inevitably stimulated in their growth by the irritation caused by the current, and the patient's last condition is worse than the first.

5. HYPERTROPHY OF THE NAILS.

One affection only, onychauxis, is to be considered under this heading.

ONYCHAUXIS.

Synonym.—Onychogryphosis.

Definition.—An increase in the size or the thickness, or both, of the nail.

Symptoms and Course.—Hypertrophic nails may be of normal thickness and texture, and be simply increased in length up to 3 inches or more. Or they

may be broad and thick, tend to split in a lamellar manner, and, by their pressure on the neighboring soft parts, be the cause of paronychia. Or again, they may be bent and curved in various directions, and often in a spiral shape; which latter condition is more correctly called onychogryphosis. The nails lose their luster, become rough, furrowed, fissured, and of a blackish- or brownish-gray color. Increase in size of the nails also occurs during the course of various diseases, eczema, psoriasis, lepra, syphilis, etc. (pp. 200, 217). Onychauxis occurs most often in the toe-nails, and is rarely seen upon the hands.

Etiology.—These conditions are sometimes congenital; but they are more commonly seen in elderly persons, in the bedridden, and in other cases where proper care is not taken of the nails. The pressure of improper footwear is a potent cause of the affection.



FIG. 128.—Onychauxis.
After Van Haren-Noman.

Pathology.—The papillary body of the nail-bed is hypertrophied, but there is probably a change in quality as well as in quantity of the epidermic cells.

various-sized, warty, and pigmented masses. Epidermal proliferation and scaling and increased sebaceous secretion are often present. In *nævus pilosus* the hypertrophied area, whether smooth or rough, is more or less covered with coarse lanugo or longer hairs. Extensive *nævi* of this variety, covering large surfaces of the body, and causing the skin to resemble the hide of an animal, have been reported. The color of the smooth or warty skin varies, as does that of the hair upon it; and verrucæ, fibromata, and lipomata are often present either in the area of the *nævus* or outside it. As



FIG. 129.—*Nævus pigmentosus*.
From photograph by the author.

is the case in general hypertrichosis, congenital defects of the teeth are often found in conjunction with these deformities. In *nævus lipomatodes s. mollusciformis* there are elevations and projections—tumors of fatty or connective tissue of varying size and shape—in the pigmented area. Some cases of extensive *nævi* are unilateral, or follow the tracks of the nerves, and are described as *nævus unius lateris*, *Nervennævi* (Ger.).

Etiology.—There is no scientific foundation for the belief that maternal impressions have anything to do with the appearance of *nævi*. The condition is hereditary in some instances; but

we are ignorant of its real cause.

Pathology.—In *nævus spilus* there is simply an accumulation of pigment in the rete and the upper layers of the corium. In all the other forms there is in addition hypertrophy of the corium, more especially of the papillæ, of the epidermis, and of the glandular structures of the skin.

Prognosis.—This is good as to life and health, though occasionally *nævi* form the starting-point of sarcoma and carcinoma later on. The possibility of removal depends, of course, on the site and the extent of the deformity.

Treatment.—No attempt should be made to treat very extensive pigmentary *nævi* either of the smooth or the warty and hairy varieties; for, apart from the difficulties and length of time that is required, the cicatricial tissue may be more deforming than the original lesion. Circumscribed smooth *nævi* may be treated with trichloroacetic acid, carefully applied to the part by means of a glass rod at intervals of a few days, or with the sublimate collodion (No. 129, p. 251). But for these, as for the smaller hairy and warty *nævi*, electrolysis is usually the most suitable and efficacious means of treatment. The process is similar to that for epilation of the hairs (p. 49), but a somewhat coarse needle may be employed. If the pigment deposit is superficial, the needle should be passed in obliquely under the epidermis,

so as to "blister the spot," as Fox terms it. Larger growths may be curetted, or destroyed with the Paquelin, and an iodoform dressing applied. For the molluscoid forms the knife or the galvanocaustic snare offers the only means of relief.

LENTIGO.

Synonyms.—Ephelides, freckles, *Linsenflecke*, *Sommersprossen* (Ger.), *taches de rousseur* (Fr.).

Definition.—Small, circumscribed deposits of pigment, appearing as spots or patches, and most commonly seen on the face and the backs of the hands.

Symptoms and Course.—Freckles are never congenital, and rarely appear before the second decade of life. They are pinhead- to pea-sized discolorations, varying in tint from a salmon yellow through brown to a sepia black. Their form is rounded, oval, polygonal, or irregular, and they are never elevated above the surface of the skin. Their usual site is upon the face, especially the cheeks and nose, and on the backs of the hands. In rare instances they have been seen on other and covered parts of the body. There may be few or many, and the patches may be isolated or confluent; and in extensive and deeply colored cases the deformity is considerable. Both sexes are equally liable to them; but they occur most commonly in individuals of light complexion and with red or auburn hair. Mulattos are very much subject to them, as they are to other pigment anomalies. They grow darker in summer, and fade, but do not entirely disappear, in the winter.

Etiology.—Heredity has some influence here, as with other pigmentations. The sun's rays, more especially the ultra-violet ones, cause their appearance and extension; but a congenital predisposition to their appearance is also necessary.

Pathology.—A freckle is a collection of pigment granules in a circumscribed group of rete-cells, and it differs from chloasma only in the shape and size of the affected area.

Prognosis.—Freckles may be removed, but they are almost certain to return upon renewed exposure to sunlight.

No. 131. *Bulkley's Lotion.*

| | | | | |
|--------------------------|---|---|---|---------|
| R̄ Hydrarg. chlor. corr. | . | . | . | 3 parts |
| Boracis | . | . | . | 20 " |
| Acid. acetic. dil. | . | . | . | 60 " |
| Aq. ros. | . | . | . | 500 " |

Treatment.—This is in general that of chloasma and other pigment accumulations. Any agent that will cause inflammation and subsequent desquamation of the epidermis will remove them for the time being. I have found 1 : 500 sublimate compresses, allowed to remain in situ for three or four hours, efficacious; but the

patient should be warned beforehand of the swelling and redness that will ensue. Bulkley recommends sublimate and acetic acid (No. 131, p. 261) to be brushed over or rubbed into the affected areas night and morning.

CHLOASMA.

Synonyms.—Liver-spot, *masque de la grossesse* (Fr.).

Definition.—An abnormal deposit of pigment in the skin, appearing as a smooth, yellow-brown to blackish, circumscribed or diffuse discolored patch.

Symptoms and Course.—The pigmentation of chloasma may be sharply limited, or it may be diffuse and shade gradually into the color of the normal skin. Its shape may be circular, oval, or irregular; and its size varies from that of a thumbnail up. Its color may be so light a yellowish brown as to be barely perceptible; or it may be darker brown or even blackish, and is then called melanoderma. It may be due to external agents and local affections of the skin, or it may be caused by derangements of the internal organs and by general diseases. Chloasma caloricum is the tanning of the skin that is caused by exposure to the rays of the sun. It soon fades away when its cause is removed. Chloasma traumaticum is caused by the local action of external agents upon the skin, or follows the lesions of various dermal affections, and appears as a diffuse or circumscribed discoloration which lasts for a long time or is permanent. Chloasma symptomaticum s. uterinum appears in conjunction with abnormalities, derangements, or diseases of the uterine organs, and forms a diffuse or well-defined spot or patch of varying shade, oftenest situated on the forehead, the sides of the nose, cheeks, and neck. It usually disappears when its cause is removed.

Etiology.—An excessive deposition of the natural pigment in the skin may be due to external or to internal causes. Any chemical, mechanical, or thermic irritant that causes long-standing hyperemia of the skin may occasion its appearance. Such are the long-continued use of counter-irritants, vesicants, and plasters, exposure to sunlight, the pressure of clothing, apparatus, etc. Similar discolorations accompany or follow certain dermal affections. After the erythematous lesions the discoloration is fugitive; but that following lichen planus, the syphilodermata, etc., is darker and more persistent. More diffuse pigmentations may follow all the itching skin diseases, eczema, phtheiriasis, prurigo, etc., and is due to the deposit of blood-pigment in the skin from the lesions caused by scratching.

Internal causes may be various affections of the system and of special organs; least commonly, however, in spite of the popular name of the deformity, diseases of the liver. Diffuse discolorations occur with cancer and phthisis. Most often by far, however, they occur in connection with affections of the uterine tract, functional disorders, sterility, amenorrhea, displacements, tumors, ovarian disease, etc., and they are found with especial frequency in gravidity. There is a well-established relationship

between these conditions and the pigment deposits, and the latter disappear when the former are relieved; but we are ignorant of the reasons for it.

Pathology.—The skin is entirely unaltered in chloasma, save for the excessive deposit of pigment granules in the rete.

Diagnosis.—The unaltered condition of the skin, save for the pigmentation that does not disappear under pressure, and the entire absence of inflammatory appearances and subjective sensations, are characteristic. Chloasma and chromophytosis might be confounded; but the slight furfuraceous desquamation and the demonstration of the etiological agent under the microscope will always enable us to distinguish the parasitic disease.

Prognosis.—This is uncertain. We may be able to remove the spots, but they are very liable to return. The means employed for their eradication are necessarily such as are liable themselves to cause pigmentation of the skin.

Treatment.—This consists in the first place in the removal of the cause, when such can be ascertained to exist. Locally, the old pigmented epithelial cells must be removed. This is best done by means of bichloride compresses, 1 to 1000 or 500, allowed to remain on for several hours, until inflammation and vesiculation occur; the parts are then to be dressed with a mild dusting powder or ointment (No. 18, p. 61, No. 26, p. 70, Nos. 68, 69, p. 135). Bulkley's lotion (No. 131, p. 261) or citric acid in watery solution of a strength of 1 to 16 may be used in a similar way. Touching the spots with pure carbolic acid has done well in some cases. Salicylic acid, in ointment, paste, or plaster (No. 79, p. 153, No. 124, p. 243), is an efficient agent to remove the superficial epidermic layers. It is a safe application, and should always be tried before more active agents are used. We must never lose sight of the fact, however, that all these agents are themselves liable to cause pigmentation of the skin.

CLASS V.

NEW GROWTHS.

UNDER this heading we classify a number of dermal changes that consist essentially in the growth and infiltration of the skin with new elements, and usually appearing as tumors. They may be homologous or heterologous, benign or malignant. The new elements are of connective tissue in cicatrix, keloid, fibroma, myxoma, neuroma, lipoma, xanthoma, and sarcoma; of muscular tissue in myoma; of vascular tissue in angioma and lymphangioma; and of epithelial tissue in adenoma and carcinoma.

1. NEW GROWTHS OF CONNECTIVE TISSUE.

CICATRIX.

Cicatrix, scar, *Narbe* (Ger.), is a dense, smooth, attached or movable, connective-tissue new growth covered with epithelium, which replaces the normal elements and glandular structures of the skin where the connective tissue of that organ has been destroyed by traumatic, ulcerative, or necrotic processes. It occurs after destructive injuries and after the various inflammatory diseases, as acne, variola, zoster, ecthyma, lupus, syphilis, dermatitis, etc. It forms an important secondary lesion of the skin, and as such its chief characteristics have already been described (p. 38). Scars are usually atrophic, and cause deformity and disability by the traction that they exert and the loss of motion that they occasion. They are sometimes hypertrophic; but as there is no practical distinction to be made between this condition and spontaneous keloid, the hypertrophic scar will be considered in connection with that subject.

The kind of scar resulting from any one of the above-mentioned processes depends upon the course of the granulations from which the new connective tissue develops, and it is therefore necessary to watch the granulation process and control its growth. Either excessive or deficient granulation will prevent cicatrization and the



LYMPHANGIOMA.



VITILIGO



TYPOGRAVURE.

KELOID.



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FIBROMATA.

formation of the epithelial covering that terminates the process; for both can only occur when the granulations are just on a level with the surrounding skin. Deficient granulations must be stimulated with camphor, iodoform, or the nitrate of silver in 1- to 2-per-cent. solution. Exuberant granulations must be repressed with the nitrate-of-silver stick, straps of adhesive plaster, or compresses soaked in alcohol. The treatment of scars after their formation is simple when the surrounding tissues are lax and elastic enough to permit of their excision and replacement by a simple linear cicatrix. Where this is not the case, scarification (p. 50) offers the best chances of improvement, though electrolysis and galvanopuncture may also be tried. All these measures should be followed by the persistent use of the mercurial plaster. Baths, douches, and massage may be employed to soften scars and render them elastic.

KELOID.

Synonyms.—Cheloid, *Narbenkrebs*, *Knollenkrebs* (Ger.).

Definition.—A benign connective-tissue new growth of the skin, characterized by the appearance of raised, variously shaped and sized, smooth, elastic, white or pinkish tumors, occurring after injuries to the cutis or spontaneously.

Symptoms and Course.—Keloid begins as a small, pale, pea-sized nodule which gradually grows into a sharply circumscribed, dense, elevated tumor which may occupy an area of several square inches. Its shape may be circular, oval, elongated, or irregular; and in many cases it consists of a central mass with projecting arms, which gives to the growth a crab-like appearance. Its color is white or pinkish; it is hard but elastic to the touch; and its surface is covered with a thin epidermis in which sweat-glands are present, but no hairs and sebaceous glands are to be found. A single tumor, or many, may be present. De Amicis records a case that had three hundred and eighteen of these neoplasms. Keloids grow very slowly, and, having attained a certain size, usually remain unchanged for life. In exceptional cases they undergo retrogressive changes and disappear, and sometimes they develop into epitheliomata. Their commonest seat is upon the sternum, but they are also found upon the face, trunk, and extremities. The subjective symptoms that they occasion are limited to slight pain and tenderness on pressure.

Two varieties of keloid are to be distinguished. The false or cicatricial keloid is often single, and here the new growth develops from the scars of any of the dermal affections that are accompanied by loss of tissue,—acne, zoster, variola, syphilis, etc.,—from traumatisms, and with especial frequency from burns. The shape, size, number, and location of the keloids will depend largely upon the characters of the original scars. They may be distinguished from the simple hypertrophic scar by the fact that the connective-tissue new growth extends beyond the limits of the original lesion. The true keloid develops in the normal connective tissue of the skin without antecedent cicatrix formation. As, however, we necessarily depend on the

history of the patient for information upon this subject, it must always remain a matter of doubt; and it is possible that spontaneous keloid may have developed at the site of pressure, contusions, or small and forgotten lesions of the skin.

Etiology.—This is really unknown. Family predisposition may have some influence, and syphilitic scars and those produced by burns seem especially prone to become keloidal. The very young and the aged are rarely affected. The colored races seem more prone to the disease than other people. Many apparently spontaneous cases follow the slight lesions of acne, varicella, herpes, etc.



FIG. 130.—Keloid.
From photograph by the author.

Pathology.—The keloidal tumor is composed of bundles and masses of connective tissue imbedded in the skin. In the false form the new tissue is irregularly disposed, and the papillæ of the skin are destroyed. In the true form the dense connective-tissue bundles are horizontally arranged in the corium, and the rete and papillæ are intact.

Diagnosis.—The hard, elastic, elevated, permanent, scar-like, and usually insensitive tumors are quite characteristic. The hypertrophied cicatrix is to be distinguished from keloid by its exact limitation to the site of the original lesion; and this is a matter of some importance, since the operative interference that might be proper in the one case is useless or even hurtful in the other.

Prognosis.—This is very doubtful so far as the removal of the tumors is concerned.

They frequently resist all ordinary measures, and are very prone to recur after removal.

Treatment.—This should only be undertaken when, for cosmetic or other reasons, it is very desirable to remove the tumors. Treatment by excision or destruction with the cautery is very unsatisfactory, as the tumor is almost certain to return in the scar. Multiple scarification, cross-hatching the tumor with a bistoury or the scarificator (Fig. 15, p. 50), the incisions being deep enough to entirely divide the growth, is the most promising course of treatment to pursue. This should be done once a week, the mercurial plaster or the 20- to 50-per-cent. resorcin plaster being applied during the intervals. The process is not as painful as it seems, and I have obtained good results from it in one case. Electrolysis, as described for the de-

struction of hairs (p. 49), has been successfully employed, the needle being passed obliquely from the margins through the center of the growth.

FIBROMA.

Synonyms.—Fibroma molluscum, molluscum fibrosum, molluscum pendulum.

Definition.—A connective-tissue new growth, characterized by the appearance in the skin of flat or pedunculated, rounded, painless, soft or firm tumors of varying size.

Symptoms and Course.—True fibroma begins as a minute, circumscribed, nodular tumor deeply seated in the normal skin, and varying in consistency in accordance with the hardness of the connective tissue of which it is composed. It usually appears first in childhood, and may even be present at birth; and it increases slowly but continuously up to a certain size, and then remains stationary and persists for life. When fully developed it forms a tumor that varies in size from that of a pea to a mass as large as a child's head and weighing many pounds. A single one may be present, but there are usually several of them; often they are very numerous, and as many as three thousand have been counted in a single case. In shape they may be semiglobular, broad-based and adherent, or they may be projecting, ball- or club-shaped, and pedunculated (molluscum pendulum). Their consistence may be soft, or firm and elastic. The skin over them is normal and loose or tense and reddened; it may be hypertrophied or atrophic, and sometimes shows hairs and a few large comedones on its surface. Fibromata, when numerous, are usually most abundant upon the trunk; but the head and limbs are often affected. They are rare upon the palms and soles. In some cases fibroma appears as a single large, not distinctly circumscribed, and pendulous growth. Occasionally the growth of the tumors is rapid, and excoriation, ulceration, and even sloughing may occur. In very rare instances they finally undergo a sarcomatous or carcinomatous degeneration. Save in these cases, however, the general health is not affected, and the patient suffers only from the cosmetic effects of the deformity, and the interference with his vocation when the tumors are very large and heavy or are situated on the face, and with sexual intercourse when they are upon the genitals. The malady occurs with equal frequency in both sexes, but it is very rare in this country.

Etiology.—The cause of fibroma is unknown; heredity has some influence, as is evidenced by the records of several cases in one family.

Pathology.—In the softer fibromata the connective tissue is loosely arranged in alveoli, and is gelatinous and in a more or less imperfectly developed condition. The older and firmer tumors are more densely fibrous.

Diagnosis.—The multiple hard or soft tumors, deep-seated or projecting, their stability and very slow course, and the entire absence of general and subjective

symptoms, are characteristic. Molluscum contagiosum grows quickly, is very superficial, has a central depression and opening, and expressible, hyaline contents. Neuromata may be distinguished by their painfulness and sensitiveness. Lipomata are soft and lobulated, and never pedunculated.

Prognosis.—Fibromata are benign tumors, and rarely undergo inflammatory changes or carcinomatous or sarcomatous degeneration. Very exceptionally they undergo spontaneous involution. If few in number, they may be removed; but we can do little for the cases in which they are numerous.

Treatment.—Arsenic given persistently in full doses may be tried; but the only treatment that is at all hopeful of results is the surgical one, and that is applicable only to cases in which the tumors are not numerous. Excision, or destruction with the galvanocautery or the *écraseur*, may be employed to remove the growths.

MYXOMA.

Myxoma is a rare affection of the skin, appearing first as a small subcutaneous nodule of a soft and jelly-like consistency, and rapidly increasing in size. The skin over it, at first normal and freely movable, becomes attached and reddened, and finally ulceration and perforation occur. It may appear anywhere, more especially where the panniculus adiposus is thick, and myxomatous tumors have been found on the back, shoulders, gluteal regions, thigh, and the labia majora. They may be single or multiple. They are composed of immature gelatinous connective tissue, and are not benign tumors; for while metastasis and general infection are rare, they are apt to return in situ after operation. They are frequently mixed growths, myxofibromata, myxosarcomata, myxolipomata, etc., and then they partake more or less of the characteristics of the other tumor elements of which they are composed. The only treatment is excision.

NEUROMA.

Under the name of neuroma is described a very rare tumor of the skin which is in almost all cases a fibroma starting from the perineurium of the superficial nerves. It occurs in middle or advanced life, and appears as pinhead- to hazelnut-sized, round or oval, and usually multiple tubercles, seated in the skin of the shoulders, thighs, buttocks, etc. Their color is pinkish or purplish; they are firmly seated in the corium; and they are both tender and spontaneously painful. The nerve-structures suffer only secondarily. The only treatment is excision. It is doubtful if tumors composed of true nerve-tissue occur in the skin.

LIPOMA.

A lipoma, adipoma, fatty tumor, *Fettgeschwülst* (Ger.), is a circumscribed or diffuse cutaneous or subcutaneous tumor composed of fatty tissue. It forms a soft



ELEPHANTIASIS



SARCOMA PIGMENTOSA.



TYPOGRAPH.

SARCOMA CUTIS.



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TUBERCULOSIS CUTIS VERRUCOSA.

PLATE XLVIII.

lobulated mass of varying size; occasional examples are large and weigh many pounds. The superjacent skin is normal and movable, and, if the growth is large, may be distended and thinned (lipoma polyposum s. pendulum). Lipoma is a common affection; the tumors may be single or multiple; as many as two hundred have been found by Weber in a single case. They may occur anywhere where fatty tissue exists, and are commonest on the back and shoulders. They are most often seen in females, and usually appear late in life. They are most often distinctly circumscribed, but occasionally they form more diffuse and pendulous masses. They are benign tumors, and are not much subject to change; but sometimes they retrogress spontaneously, or degenerate into a cheesy mass; and, if they are very large, ulceration may be occasioned by mechanical causes. The treatment is excision.

XANTHOMA.

Synonyms.—Xanthelasma, vitiligoidea.

Definition.—A new growth of the integument and the mucous membranes, composed of fattily infiltrated connective tissue, and characterized by the appearance of circumscribed yellow plates, papules, or tubercles, situated most commonly upon the eyelids.

Symptoms and Course.—Xanthoma appears as yellow, yellowish-white, or yellowish-brown patches, nodules, or larger masses embedded in the skin or mucous membrane, and sometimes projecting above the surface. Their consistency is soft, and the integument over them feels velvety and normal. They begin as minute nodules, increase slowly up to a certain size, and then remain stationary for life; in the rarest instances only do they undergo spontaneous involution. They are sometimes seen in children, but are commoner in adults, more especially in females of dark complexion; and they are sometimes associated with gout and hepatic disorders. They are accompanied by no subjective symptoms at all, and are obnoxious only for cosmetic reasons, and occasionally because of their interference with the use of joints when situated around them.

Several varieties are to be distinguished. Xanthoma planum is by far the commonest form, and appears as bean- to finger-nail-sized, distinctly limited plaques or streaks, which a close inspection reveals to be composed of a multitude of fine yellow nodules, each one with a minute central pinkish point. They are soft and usually not elevated. They occur most often upon the eyelids, appearing first at the inner canthus, and gradually spreading as confluent patches or separate plates over the lid and even onto the cheeks and nose. Patches may also appear upon the neck and on the oral mucous membrane. Xanthoma tuberosum may coexist with the plane form, and consists of papules or tubercles or roughened plaques of varying size, somewhat firmer in consistency than the former variety, and covered with an unaltered epidermis. Sometimes the growths form sessile or pedunculated

tumors, usually of small size. Their commonest seat is over the flexures of the joints and on the hands, feet, and scalp. Xanthoma diabeticorum is a rare variety that occurs in connection with diabetes. The papules are numerous, conical, discrete or confluent, and of the characteristic color with red areoli. The new growth has been seen on the buttocks, loins, elbows, face, palms, soles, scalp, and in the mucous membrane of the mouth. It is sometimes quite extensive. It differs from xanthoma of the ordinary variety in its rapid development; and it may disappear as quickly, leaving no trace behind.

Etiology.—The causes of xanthoma are obscure; some cases are apparently hereditary, and others seem to occur in connection with diseases of the liver. In xanthoma diabeticorum the skin lesion has been seen to disappear spontaneously with the disappearance of the glycosuria, and there seems to be ground for the belief that there is a connection between the two symptoms.

Pathology.—Xanthoma is a connective-tissue new growth of the corium covered with a thin epithelium. Its yellow color is due to the fatty infiltration of the new elements.

Diagnosis.—The chamois-yellow patches embedded in the corium, with no change in the texture of the skin that is perceptible to the touch, are characteristic. The tumors of milium, which occur in the same situation, are tense, hard, and white; they are superficially situated in the epidermis, and their contents are expressible.

Prognosis.—The tumors cause little trouble. They occasionally require removal on account of the disfigurement that they entail, or because they interfere with the patient's work.

Treatment.—The xanthoma tumors or plaques may be removed with the curette, excised, or destroyed with the Paquelin cautery or by electrolysis. When they are situated upon the eyelids care must be taken to avoid deformity, as ectropion, etc., from the contraction of the resulting scar.

SARCOMA.

Synonym.—Sarcomatosis cutis.

Definition.—Single or multiple, various-sized and -shaped, white or pigmented malignant tumors of the skin and subcutis.

Symptoms and Course.—The affection usually occurs secondarily to sarcoma of the internal organs, and belongs to the domain of surgery. It is rare as a primary affection of the skin, and is seen in three forms. The commonest is the melanotic sarcoma, or melanosarcoma, in which the affection begins as discrete, rounded or lobulated, pea- to bean- or egg-sized tumors, of a grayish-brown or bluish-black color. There may be a single tumor or several. As they increase in size, adjacent tumors may coalesce to form irregular, various-sized, projecting masses, in which ulceration not infrequently occurs. Their commonest site is on the backs of the hands and feet, on the genitals, or on the face near the orbit. They originate not



TYPOGRAVURE.

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ICHTHYOSIS HYSTRIX. .

PLATE XXIV.



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PEMPHIGUS
PLATE XIV

infrequently from a pigmentary mole or a *nævus*, from the pigmented tissues, and from the general integument in the colored races.

The non-pigmented sarcoma is rarer, and appears as one or more isolated, hard, elastic tumors, usually small in size, and covered with smooth, shining, white or sometimes reddened epidermis. As the growths increase in size they may coalesce to form nodular plates and masses. The localized form frequently begins in a *nævus* or a warty growth that has been irritated. In the generalized form the numerous tumors are smooth and spherical, cutaneous or subcutaneous, growing rapidly and coalescing into larger infiltrations which finally undergo ulceration.

Still rarer is the multiple pigmented form, which differs from the preceding in that the tumors are more or less deeply discolored from the hemorrhages that occur in their substance. They begin as a few or many pinhead- to pea-sized, brownish-red, bluish, or purplish, smooth, shining nodules. These increase in size, multiply,



FIG. 131.—Sarcoma cutis.
From photograph by the author.

and become confluent, forming larger rugose infiltrations. Ulceration is rare, but the central portions of the masses not infrequently undergo involution, forming cicatricial, darkly pigmented depressions. The isolated tumors may also undergo resorption or become gangrenous. Late in the disease sarcomatous nodules appear in the mucosæ of the respiratory and the gastro-intestinal tract.

Sarcomatous tumors of the localized form occur most often on the backs of the hands and feet and on the face; in the more diffused forms the skin of the trunk and

extremities is chiefly involved. Their number varies greatly; there may be one, or only a few, or hundreds of them. Their course also is very uncertain. In some cases they take years to spread, apparently remaining stationary or even retrogressing for long periods of time, and the general health remains good. In most instances, however, their progress is rapid, and coalescence and ulceration soon set in. In all cases death ultimately occurs from exhaustion, intercurrent disease, or sarcomatous involvement of the viscera. Sarcoma occurs not infrequently in youthful individuals, and the disease takes from two to six years to reach a fatal termination.

Etiology.—The cause of sarcoma is unknown to us. Melanotic sarcoma, in at least one fourth of all cases, has developed from a wart or a *nævus*. Certain races, notably the Russian and Polish Jews, seem especially prone to the affection.

Pathology.—Sarcoma is a growth composed of embryonic connective tissue with round or spindle-shaped cells. The pigmented forms show hemorrhages, and pigment granules in the new cell-mass.

Diagnosis.—The small, painful, sometimes discolored tumors, beginning on the hands and feet, are not especially characteristic. The diagnosis is frequently a matter of difficulty, largely on account of the rarity of the affection. Examination of an excised piece under the microscope is usually necessary. Sarcoma is most likely to be confounded with gumma; but in this latter the tumors are not so numerous, they run a quicker course, and rapidly go on to ulceration. The palmar and plantar syphilide, fibroma, and the tumors of lepra, lupus, and mycosis fungoides might possibly be confounded with sarcoma; but it is not necessary to recapitulate their characteristics.

Prognosis.—This is bad in most cases. The disease usually ends fatally, though involution and recovery are recorded.

Treatment.—Prophylaxis consists in the removal of warts and *nævi* that might form the starting-point of sarcoma. Excision is, of course, to be advised in all cases in which the number, size, and location of the tumors render it practical; but the results have not been good, since return in situ or metastasis finally occurs. Good effects have been seen from the long-continued subcutaneous injection of arsenic, as recommended by Köbner; and both he and Shattuck have seen a complete cure effected. Fowler's solution, diluted with 2 or 3 parts of water, must be injected every other day or every third day in full doses. It should be tried in every case, since it is claimed that it retards the development of the tumors, even if it does not cure the disease.

2. NEW GROWTHS OF MUSCULAR TISSUE.

MYOMA.

Dermato- or leiomyomata are extremely rare new growths of the skin, composed, as their name indicates, of unstriped muscular fibers, which are arranged in a net-

work bound together by a greater or less amount of connective tissue. There may be a single tumor, which may be as large as a hen's egg, and exhibit a slow vermicular motion; but more frequently there are a number of small, red, hard tumors scattered over the body. They are seated in the cutis and covered with a normal epithelium; and they are most often found in places that are abundantly provided with smooth muscle, as in the region around the mamilla, on the scrotum, labia majora, etc.; but they may originate anywhere on the body from the arrectores pilorum. Sometimes they occur in combination with other tissue, forming fibromyomata, angiomyomata, etc. Their growth is extremely slow, and they hardly give rise to any subjective symptoms. Their etiology is unknown, and the diagnosis can only be made by the microscopic examination. Arsenic has been recommended in their treatment; but enucleation or excision, or removal by electrolysis or the ligature, is preferable.

3. NEW GROWTHS OF VASCULAR TISSUE.

ANGIOMA.

Synonyms.—*Nævus vasculosus*, *nævus sanguineus*, *telangiectasis*, *angioma cavernosum*, *tumor cavernosus*, port-wine stain, mother's mark, *Gefässmal* (Ger.), *tâche de feu* (Fr.).

Definition.—New growths of the skin composed of vascular tissue.

Symptoms and Course.—Three kinds of vascular new growths of the skin are to be distinguished:

Nævus vasculosus, *sanguineus*, or *flammeus* is a vascular anomaly that is visible at birth or shortly afterward, and is often combined with some increase of the connective tissue of the area involved. It usually appears as a smooth, sharply limited discoloration; but it is sometimes rugose and more or less elevated, so as to form papular or tubercular or even cauliflower-like elevations. *Nævi* are most commonly composed of capillaries, and then their color varies from a light to a dark red; arterial *nævi* are bright red in color, and venous ones dark blue or violet. They are found most often upon the head, but they also occur upon other parts of the body. They may be single or numerous, small or large, superficial or deep-seated, and are almost always compressible. They usually increase slowly after birth until they have attained a certain size, and then remain stationary. In some cases, however, they undergo spontaneous involution; adhesion of the walls of the vessels and obliteration of their lumen occurs, and a small amount of cicatricial tissue remains to mark the place of the vascular tumor. In rare cases thrombosis, followed by gangrene, occurs.

Telangiectasis is an acquired vascular overgrowth, consisting mainly of an enlargement of preëxisting vessels, without increase of the connective tissue. The capilla-

ries and the fine arterial and venous branches are involved, forming a simple stain of the skin, or appearing as a plexus of fine dilated vessels often arranged in radiate order around a central spot (nævus araneus). Its color varies from a bright red to



FIG. 132.—Nævus venosus.
From photograph by the author.

a bluish purple, depending upon the preponderance of arterial or venous branches in the spot. Its size is from that of a small pea upward. Telangiectases are situated most commonly about the face; and, when localized about the nasal or buccal orifices, they may spread on to the mucous surfaces. They appear most commonly in middle life, and increase in size and number as the patient progresses toward old age. They form a part of the ordinary symptomatology of rosacea.

Angioma cavernosum is also a non-congenital form, appearing as rounded, often fairly large-sized tumors

which are both compressible and erectile and are frequently pulsating. They are rare new growths, and vary in color like the ordinary nævi.

Etiology.—Our knowledge of the etiology of these growths is very unsatisfactory. There is no proof that they are in any way connected with antenatal maternal impressions, the popular belief to the contrary notwithstanding. The telangiectases are often symptomatic, being the expression of an attempt at a collateral circulation when there is obstruction from a tumor or the contraction of new-formed connective tissue, etc. Some of these vascular overgrowths occupy the area supplied by a cutaneous nerve; but their relationship to the nerve-distribution is unknown.

Pathology.—Nævi consist of dilated and hypertrophied or newly formed arteries, veins, and capillaries, usually covered with a normal epidermis. More or less newly formed connective tissue is present in all cases, though in the telangiectases it is not apparent; and there is often an increased development of the sebaceous glands, hair-follicles, arrectores pilorum, and fatty tissue (nævus lipomatodes, angio-elephantiasis). The cavernous angiomas are composed of true erectile tissue, there being a connective-tissue framework with large spaces lined with endothelium, these



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NAEVUS VASCULOSUS

PLATE XLIII

latter forming a free communication instead of the ordinary capillary one between the arteries and veins.

Diagnosis.—This can hardly present any difficulties. The flat reddish or purplish stains, the blue and red projecting tumors, and the erectile outgrowths are characteristic.

Prognosis.—This depends largely upon the treatment, and must be cautiously expressed. Nævi sometimes disappear spontaneously or by ulceration. In general the prognosis is better in the telangiectases and simple stains than in the larger and the erectile tumors.

Treatment.—This should only be undertaken when the vascular new growth is rapidly increasing, or for cosmetic reasons. The smaller stains and telangiectases may be removed by painting on a number of layers of the sublimate collodion (No. 129, p. 251), the surrounding parts being protected with plaster or collodion, and the application being allowed to remain in place until it peels off. Caustic potash, 3i-iv, to water, 3i, may be applied two or three times at intervals of a few days. In the very superficial forms painting the affected surface with nitric acid or the acid nitrate of mercury is sometimes efficacious; and very minute nævi may be destroyed by plunging a red-hot needle into them, or by means of the Paquelin or the galvanocautery. The injection of solutions of the chloride of zinc or of tannin, or of the tincture of the chloride of iron, into these growths is not advisable, inflammation, sloughing, and even death having occurred therefrom. Vaccination upon the n void growth may be tried in suitable cases, punctures with a needle being employed to avoid the hemorrhage that would follow scarification. Cross-hatching with the scarificator (Fig. 15, p. 50), cutting through the affected skin in a series of parallel and crossed lines, is effective. The part should be frozen with the ether spray beforehand, and the hemorrhage, which is free, can be controlled by pressure. Multiple puncture is recommended by Sherwell, a bundle of needles fixed on a cork or other suitable holder, and dipped into a 50- or 90-per-cent. carbolic or a 25-per-cent. chromic-acid solution, being used. Where the angioma is at all extensive, it must, of course, be operated upon in sections.

Electrolysis, however, is by far the best method of treatment for these new growths, being both successful and safe, with no subsequent pain and a minimal amount of scarring. The process is exactly similar to that employed for the removal of hairs (p. 49). A single needle, or several mounted upon one holder, may



FIG. 133.—Papillary nævus.
From photograph by the author.

be employed. In the flat angiomata the needle should be passed horizontally through the skin among the enlarged vessels; visible ones can be pierced singly, and the more projecting tumors should be transfixated through their bases in various directions. A current as strong as the patient can comfortably bear should be employed, varying from 2 to 10 milliamperes, depending upon the sensitiveness of the region operated upon, with the object of destroying the vascular walls and coagulating the blood within them.

Warty and pigmented *nævi* may be curetted or excised, or removed with the Paquelin or treatment of the galvanocautery. The pendulous forms require excision or the ligature; but the larger growths, angio-elephantiasis, and the cavernous tumors belong to the domain of general surgery.

LYMPHANGIOMA.

This rare tumor of the skin is composed of dilated, hypertrophied, and newly formed lymphatic vessels, together with a varying amount of new connective tissue. It appears in two forms. In the commoner, lymphangioma simplex, there occur small aggregations of irregularly grouped, deep-seated, transparent vesicles, with thick walls, and with healthy skin between the patches. The tumors are usually multiple, deeply seated in the cutis, and pinhead- to pea-sized; they are colorless or pinkish, or somewhat darker and resembling warts. On pricking them a colorless fluid containing a few lymphatic cells exudes from them. They begin in youth, running a very chronic course, and spreading slowly by the formation of new groups of vesicles outside the original patches. Lymphangioma cavernosum is even rarer, and is usually congenital. Its structure is similar to that of the cavernous angiomata, but it contains lymph instead of blood. It affects a circumscribed portion of the body, as the tongue or lips, causing a diffuse enlargement of the part (macroglossia, macrochilia). Of the treatment of these conditions not much need be said; the general health is good, and surgical interference is not advisable. Destruction by caustics or excision is apt to be followed by the appearance of new lesions at the margins of the patch. Electrolysis, as done for hirsuties and *nævus*, has given good results in Crocker's hands.

4. NEW GROWTHS OF GLANDULAR TISSUE.

ADENOMA.

New growths composed of glandular tissue are of rare occurrence in the skin, and may develop from the sebaceous or the coil glands; they may be found wherever these structures are present, but have been most often seen on the neck, head, and face, more especially upon the sides of the nose and on the forehead. They may

be congenital or acquired, and appear as pinhead- to pea- and even marble-sized, rounded or acuminate tumors, firm or soft, and of a normal color, or a yellowish- or brownish-red hue. They may remain stationary or undergo fatty or colloid degeneration, or ulcerate spontaneously, leaving scars behind. When they grow from the sweat-glands the tumors contain a drop of clear encysted fluid. A positive diagnosis, and a differentiation from steatoma, lipoma, and epithelioma, usually require a microscopic examination. The prognosis is good, and the treatment consists of their removal by surgical measures.

CARCINOMA.

Synonyms.—Cancer, epithelioma, epithelial cancer, cancrroid, *Krebs*, *Epitheliom* (Ger.), *épithéliome*, *cancroïde* (Fr.).

Definition.—A malignant new growth of the skin, characterized by the development of heterologous epithelium in the corium and subcutis, appearing as infiltrations and ulcerations of the skin, and terminating in death by exhaustion or from infection of the internal organs.

Symptoms and Course.—Carcinoma occurs in the skin, as in other organs, either as a primary or a secondary new growth, and usually in individuals over forty years of age. General considerations as to its nature and treatment belong to the domain of general surgery. Certain varieties, however, are peculiar to the skin and mucosæ, and are of common occurrence there; and the others will be considered only in so far as they are of interest to the dermatologist.

True carcinoma cutis is always of the scirrhus variety, and is usually a secondary affection, spreading either by contiguity or metastasis from cancer of the breast or of the alimentary canal. A lenticular and a tuberos form occur.

Carcinoma lenticulare is the commonest variety of the cutaneous scirrhus, usually appearing in the scar or in the skin of the chest after the extirpation of a cancerous breast. It begins as multiple, various-sized, very hard, smooth, and glistening nodules of a dull brownish or reddish color. At first they are deep-seated and discrete; but as they increase in size they project above the surface of the skin and coalesce into irregular tuberos masses. Not infrequently they form large indurated plates which may cover the chest with a stiff, leather-like envelop and impede respiration (cancer *en cuirasse*). The vascular supply is finally interfered with, and ulcerations, often covered with fungous and easily bleeding granulations, occur. The lymphatic glands enlarge, and the interference with the lymphatic circulation causes marked and characteristic swelling of the neighboring limb. Pain is very great, and the process terminates usually in a few months, death occurring from exhaustion or from metastasis into the internal organs.

Carcinoma tuberosum is rarer, and may also be primary, or secondary to cancer of other organs. It shows itself as multiple large tubercles, usually distributed over

the body, but most abundant upon the face, head, arms, and chest. The lesions are hard, sharply limited, flat or elevated and rounded, and vary from the size of a pea to that of an egg. Their color is dull brown, reddish, or violaceous. At first they

are deep-seated, but they project from the surface as they increase in size. They remain discrete; but breaking down finally occurs, and foul and painful fungating ulcerations appear. The process terminates in death from exhaustion or from metastasis.

Epithelioma or cancrioid is by far the most frequent form of cancer of the skin, forming, according to Hyde, $\frac{8}{10}$ of 1 per cent. of all cases of skin disease. It usually begins at one of the points of coalescence of the skin and the mucous membranes, being seen most often upon the face, more especially around the eyelids and the nose. It is common also upon the genitals, especially upon the prepuce and the glans penis. It occurs also upon the nasal, buccal, vaginal, and rectal mucosæ, but it is much more rarely found in other localities. It may originate in normal skin or mucous membrane, or begin in a wart, a fissure, or an excoriation, more especially when these lesions have been irritated by scratching, the use of caustics, etc. A seborrheal patch or a senile wart is not infrequently its starting-point, and it sometimes



FIG. 134. Rodent ulcer.
Case of Dr. L. Weiss.

appears in the scars of syphilitic or lupoid disease. It is preëminently an affection of old age, occurring very rarely indeed in the young. Three varieties of epithelioma are to be distinguished; but the pathological process is the same in all of them, though they may differ in clinical appearance and mode of growth. The varieties may coexist in different portions of the same integument, or develop from one another.

1. Superficial discoid or flat epithelioma, rodent ulcer, *flache Hautkrebs* (Ger.), occurs upon the face, prepuce, etc. This is the most benign and least troublesome of the epitheliomata, and may exist for years without causing any special inconvenience to the patient. It begins as one or, more rarely, as several neighboring pinkish- or yellowish-white, small, hard papules or disks or flat infiltrations, with a characteristic dirty waxy hue and a surface that has a glance like that of mother-of-pearl and is marked with minute tortuous vessels. It increases very slowly indeed in size, and it may be years before breaking down occurs; but sooner or later an excoriation appears upon its surface, covered, perhaps, with a minute crust. This gradually grows into a superficial ulceration covered with a scanty viscid secretion. The fully developed epitheliomatous ulceration is a more or less circularly shaped, sharply defined excavation, with a purplish or reddish base that may be dry and varnished-looking or slightly moist, and showing embedded in it peculiar minute waxy bodies, the cancrroid pearls. The edges of the ulceration are prominent, rolled, and somewhat undermined; and both they and the base of the ulcer are of the same cartilaginous hardness as the papule from which they develop. Very characteristic also is the presence of the dilated blood-vessels running over the waxy margin. Such an ulceration may grow very slowly for many years, spreading over the surface, and showing no tendency to spread downward. It may cease to enlarge after a time, and cicatrization may occur, especially in the center of the ulceration; this is usually partial, but may be occasionally complete. More commonly, however, the new growth finally invades the deeper structures, and develops into the infiltrating or papillary form of the disease. Pain is rarely marked in this variety of the affection until the ulceration is very large; and the lymphatic glands are usually not involved at all, or only very late. Since it is almost invariably a disease of old age, the patient frequently dies from some other cause.



FIG. 135.—Epithelioma of the penis.
From photograph by the author.

2. Deep-seated, tubercular, or infiltrating epithelioma is a rarer affection than the superficial form, and runs a much more rapid course. It occurs oftenest upon the lips, tongue, and forehead, and may originate in a wart or develop upon normal skin. It begins as a number of hard, closely aggregated, pea-sized tubercles, deeply seated, and closely united to the subcutaneous connective tissue. The tubercles may be flattened or globular, their color is dark reddish or purplish, and their surfaces are shiny and marked with dilated and tortuous vessels. As they increase in size

they coalesce into a thick infiltrated plaque, which may be elevated or not above the surface of the skin, but which shows the characteristic hardness, waxy glance, and superficial vascularization. The entire mass may reach the size of a silver dollar or a small egg; and isolated nodules, similar in character to the original lesion,



FIG. 136.—Papillary epithelioma.
From photograph by the author.

appear in the skin around the growth. In the course of time breaking down occurs in the surface or at the periphery of the nodules or infiltration, and a characteristic ulcer results. This is a rounded or irregular crateriform loss of tissue, with an uneven, reddish, often granulating and easily bleeding base, and everted, raised, hard, and purplish borders. The secretion from it is usually pale yellow, viscid, and scanty; but it may be foul and purulent if destruction is rapid. The hard infiltration of the base and margins of the ulcer is marked, and extends to the tissues beneath and around it. Pain of a sharp, lancinating variety is present at all stages, and is very marked in the later ones. The deeper tissues, fasciæ, muscles, cartilage, and bone are eventually involved; the lymphatic glands enlarge and sometimes

break down; and death occurs from marasmus, exhaustion, or hemorrhage in from one to three years.

3. Papillary epithelioma, malignant papilloma, *Blutgewächs* (Ger.), is a rapidly fatal form of cutaneous epithelioma. It may occur as an independent growth in normal skin, or grow from a mole, a wart, a nævus, or a scar in which enlargement, induration, and proliferation of the epithelium occur; or it may develop from the superficial or the infiltrating form. It occurs most often upon the glans penis, prepuce, scrotum, labia, or the mucous membranes, appearing as a more or less elevated, pedunculated or sessile, raspberry-like vegetation of a bright-red color, and so vascular that it bleeds readily to the touch. Its surface may be dry and covered with a yellowish-white epithelium, or macerated and bathed with a foul-smelling, perhaps bloody secretion; and its base is characteristically hard. At first pea-sized and slightly elevated, it grows into a projecting, egg-sized or larger, lobulated or spongy mass. Fissures, excoriations, and deeper ulcerations occur; the mass finally breaks down; and an ulcer similar to that of the preceding forms results. It is rounded or oval in shape, with an irregular base covered with granulations and bathed with a

serous discharge, or crusted, and with hard eroded or undermined borders of a purplish-red color. If the infiltration of the cutis is slight, the ulcer will assume the form of the superficial epithelioma; if it is greater in extent, the malignant deeper ulceration will result. More or less pain, dull or acute, is usually present during the process. In the course of several years the fatty tissues, the fasciæ, the muscles, and the bones become involved; the lymphatic glands enlarge, harden, coalesce, and break down; and death finally results from exhaustion.

Under the name of Paget's disease or eczematoïd epitheliomatosis is known a very superficial form of epithelioma affecting the nipple in the female. In the beginning it appears as an ordinary but intractable eczema; when fully developed the mammilla and areola are red, weeping or crusted, and careful examination reveals the presence of an induration under and around the affected tissues. Moderate itching and burning accompany the process; one breast only is usually affected; and the cases occur in women from forty to sixty years of age. After an exceedingly chronic course, lasting for years, it develops finally into one of the other forms of the disease.



FIG. 137.—Epithelioma of the lip.
From photograph by the author.

Etiology.—In spite of extensive investigations that have been carried on in regard to this subject, we are still in the dark as to the cause of carcinoma. Certain protozoa have been described as the etiological factor by Adamkiewicz and others; but their relationship to the disease is doubtful. Heredity seems to be of some influence, and cases are on record where several instances have occurred in one family. Epitheliomata frequently develop from warts, pigmentary and vascular *nævi*, etc.; and in fact all the senile changes of the skin predispose to its occurrence. Irritation, either mechanical or chemical, of traumata, warts, ulcerations, etc., seems to excite the epithelial overgrowth. This is a factor in the cancer of the lower lip of pipe-smokers, the cancer of the scrotum that is seen in workers in paraffin factories and in chimney-sweepers, in cancer of the cervix uteri, etc. The malady is very rare before middle life, but cases have been reported in children.

Pathology.—Carcinoma consists essentially of an excessive proliferation of the epithelium, which accumulates in concentric masses contained in connective-tissue alveoli. In the skin the growth begins in the rete-cells, and the increasing mass extends downward as well as on the surface, penetrating the deeper layers of the

corium, and causing irritation and inflammatory change. The new cells are arranged in compact concentric masses or nests; the central cells undergo horny transformation, and finally degenerate and break down in consequence of insufficiency of the blood-supply; ulceration occurs in the center of the mass while cell-proliferation is still progressing at the margin. Elements of the new growth pass into the lymphatic channels and cause inflammation and epitheliomatous degeneration of the lymphatic glands.

Diagnosis.—The occurrence of the neoplasm in old age, and its appearance secondarily to cancer of the internal organs, is sufficiently distinctive for the lenticular and tuberous forms of the disease. For epithelioma the slowly growing, hard, cartilaginous, waxy, and transparent tumor is fairly characteristic; and the same is true of the ulcerative form, with its chronicity and pain, its indurated

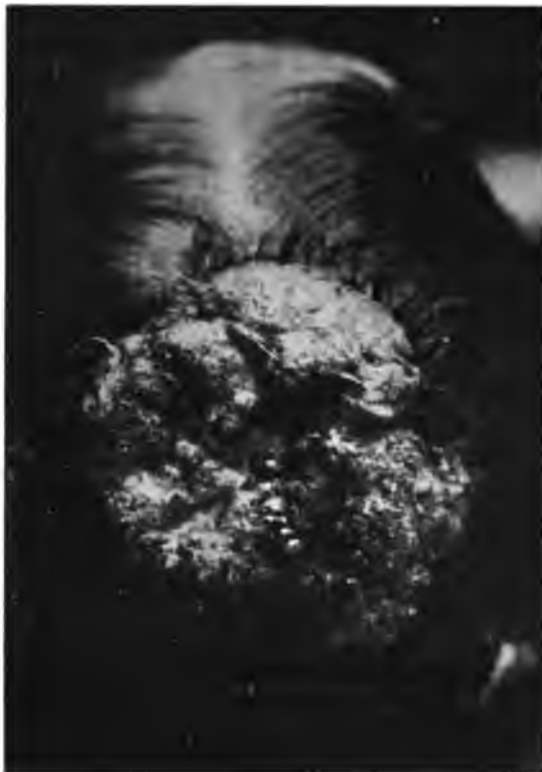


FIG. 138.—Fungating epithelioma of the scalp.
From photograph by the author.

and everted edges showing the same characters as the original tumor, and its characteristic glands. Nevertheless the diagnosis is sometimes a matter of difficulty. Before ulceration has occurred the epithelioma may be confounded with the syphilitic chancre, tubercle, or gumma, with an ordinary wart, and with the lesions of lupus and sarcoma. None of the syphilitic affections have the ivory hardness, the lancinating pain, the peculiar adenopathy, and the very chronic course of cancer; other symptoms of lues, past or present, will usually be found; they occur, as a rule, earlier in life, and they react to specific treatment. The gumma is never so hard, and goes on fairly rapidly to softening and fluctuation. Warts are very liable to be confounded with epitheliomata in the aged, and the diagnosis between them is of special importance, since these growths frequently develop into the malignant form of tumor. As soon as a

wart becomes painful, irritated, bleeding, or indurated. at its base, it should be removed. Lupus occurs in youth, rarely beginning after the thirty-fifth year; the malady is more diffuse than epithelioma, the lesions are multiple, and the soft, brownish, translucent nodules are characteristic. Sarcoma is of rapid development and takes only a few months to run its course; it occurs in early life; there is little tendency to ulceration, and a great tendency to reappearance in neighboring and distant parts. When ulceration of the epithelioma has occurred it must be differentiated from the ulcerative syphiloderm and from lupus; the papillary form must be distinguished from condyloma, and Paget's disease from a simple eczema. In the ulcerations of luetic disease the marginal induration is not so hard as in cancer, and the waxy appearance is absent; its course is much quicker; several points are usually affected at once; there is little pain; and the touchstone of treatment soon settles the diagnosis. The lupoid ulceration shows the characteristic nodules outside the loss of tissue. Condyloma may resemble a papillomatous epithelioma in its early stages very greatly; but it occurs earlier in life, and the presence of induration and ulceration settles the diagnosis in favor of the malignant disease. The induration and intractability, together with the extreme chronicity of its course, will distinguish Paget's disease from an ordinary eczema. There are always doubtful cases, however, in which the excision of a fragment of tissue and its examination under the microscope will be necessary.

Prognosis.—The general prognosis of cancer of the skin is grave, but is dependent largely on the variety, location, and stage of the disease. The superficial forms may last for many years without interfering with the general health. The true carcinomata, as well as the deeper-seated, nodular, and more destructive varieties of epithelioma, runs a more rapid course, and may reach a fatal termination in one to two years. Of bad prognosis, are excessive pain, a rapidly advancing adenopathy, occurrence in advanced age, and location in situations where the growth cannot readily be removed. Beginning and superficial cases can be cured by operative and other measures; but recurrences are prone to occur in any form.

Treatment.—The true cutaneous carcinomata are not amenable to treatment. Neither local destruction nor internal remedies have any effect upon the disease, and our efforts must be limited to the relief of the pain and the promotion of euthanasia.

The treatment of the epitheliomata is a purely local one, and consists in the removal or the radical destruction of the morbid growth and the neighboring lymphatic glands when infected. Excision with the knife, curettement, or destruction with caustics may be employed, our choice being determined by the variety, location, and extent of the disease. Whichever method is employed must be used on the apparently healthy tissue outside the limits of the growth; for the epithelial-cell nests and processes extend farther than is visible upon the surface, and any portion that is left behind will serve as a nucleus for renewed growth. Upon the mucosæ, near the orifices of the body, and in general in the very deep-seated and infiltrating forms,

removal by the knife, followed if necessary by a plastic operation to fill up defects of tissue, is the most promising and sometimes the only available method. The details of such operations, however, belong to the domain of surgery.

The commoner superficial discoid and papillary forms are better treated by less radical measures, cautery, curetting, or caustic applications. Erasion with the sharp dermal curette under local anæsthesia (Figs. 18, 19, 20, p. 50) is an excellent measure for the removal of the papillary forms of the disease; it is never, however, sufficient alone, and is best used as a step preparatory to the application of the cautery or of caustic applications. The thermo- or galvanocautery causes little pain and leaves a good scar; it is suitable for smaller growths that are situated on the mucosæ or near the mouth or eye, situations where caustics cannot be used. Caustic applications are to be employed in all cases in which the location of the cancer makes it possible; for they not only cause actual destruction of the cells with which they come in contact, but they also excite so violent an inflammation in the surrounding tissues that the new epithelial structures, less resistant than the healthy tissues, speedily succumb. Thus outlying epithelial masses situated in apparently normal tissue, which might be left behind were knife or cautery employed, are thoroughly destroyed. Potassa fusa is frequently employed. The solid stick, suitably pointed, is bored into the growth and its margins in various directions, dilute acetic acid being afterward employed to neutralize any excess of caustic action. Healthy tissues may be distinguished by their greater resistance to the point; the process is not very painful, but must usually be repeated several times, an indifferent ointment (No. 26, p. 70, Nos. 68, 69, p. 135) being employed during the intervals. Pyrogallic acid, 1 to 4 or 6, in ointment or powder (No. 44, p. 100), is a favorite application with Kaposi, Jarisch, and others. It is not painful and does not affect the healthy tissues; it must be kept in place a week or more, and be followed by the use of an indifferent ointment. Trichloracetic acid bored into the mass on a pointed glass rod is efficacious, and nitric acid can be used cautiously in the same way.

No. 132. Hebra's Cosmè's Paste.

| | | | | | |
|----|--------------------------|---|---|---|---------|
| R̄ | Ac. arseniosi | . | . | . | 1 part |
| | Hydrarg. sulphuret. rub. | . | . | . | 3 parts |
| | Ungt. aq. rosæ | . | . | . | 24 " |

No. 133. Kaposi's Caustic Paste.

| | | | | | |
|----|---------------|---|---|---|---------|
| R̄ | Ac. arseniosi | . | . | . | 2 parts |
| | Creosoti | . | . | . | 60 " |
| | Pulv. opii | . | . | . | 1 part |

The best agent, however, for the destruction of the epitheliomata is arsenious acid, made into a paste either as Hebra's modification of that of Cosmé (No. 132, p. 284), together with creosote and opium, as proposed by Kaposi (No. 133, p. 284), or, as I think preferable, in the concentrated form suggested by Marsden (No. 7, p. 46). Arsenic cannot be used near the eye, since it causes a rather violent inflammation of the surrounding tissues; nor upon the margins of the lips, on account of the danger of poisoning. But in all other situations, and in all forms save the very deep

and infiltrating ones, Marsden's paste is the best application and has done me excellent service. Its use should be preceded by a curetting to remove papillary masses and resistant epithelium. The powdered gum arabic and the arsenious acid are made into a soft paste with a little water, applied spread upon a cloth, and covered with rubber plaster. It should remain in situ for twenty-four hours, or as long as the patient can bear the pain. This latter, while constant, is not very severe, and is usually well borne; a little morphia added to the paste will mitigate it. There is no danger of absorption, and the arsenic does not affect the healthy tissues, while the new carcinomatous cells are thoroughly destroyed. The more extensive growths and ulcerations must be treated in sections, not more than 2 or 3 square inches of surface being covered at one time. The dead tissue appears as a black necrotic mass after the paste is removed, and the part must then be poulticed until the slough separates. The simple ulceration that is left behind can be treated with rose-water or simple ointment (Nos. 68, 69, p. 135) until it heals. The other arsenical pastes are used in the same way. They not infrequently require to be applied twice or oftener; but the destruction is radical, and a thin smooth scar is left behind that becomes almost invisible in the course of time. Successful removal is shown by the rapid and complete cicatrization of the ulceration left after the slough has separated. If this does not occur, or if the characteristic cancerous nodules appear in the scar, the treatment must be repeated.

CLASS VI.

ATROPHIES.

UNDER this heading are classified those changes in the skin that consist essentially of a diminution in the size or number of the cells of one or more or all the tissues that compose that organ. Degeneration not infrequently accompanies the process. The whole cutis and subcutis may be affected, as in the various forms of circumscribed and partial atrophy, xeroderma, and scleroderma; or the pigment only is involved, as in albinismus, vitiligo, and canities; or the atrophy may affect the hair, as in the various forms of alopecia, or the nails, as in onychatrophia. Certain congenital deficiencies of parts of the skin, though not strictly pathological atrophies, can be most conveniently considered here.

1. ATROPHY OF THE CUTIS AND SUBCUTIS.

General atrophy of the skin and subcutaneous tissue may be localized and partial, or generalized and spread over the whole body. They are rare as idiopathic conditions, more commonly occurring together with or following other pathological or physiological changes. We shall consider atrophia cutis propria and scleroderma.

ATROPHIA CUTIS.

Synonyms.—Atrophoderma, maculæ et striæ atrophicæ, atrophia senilis, xeroderma, glossy skin, atrophia neuriticum, atrophy of the skin.

Definition.—A diminution in quantity of the histological elements of the skin, often accompanied by degeneration.

Symptoms and Course.—Atrophy of the skin may be general or localized, idiopathic or symptomatic. Its various forms differ sufficiently to require separate consideration.

General idiopathic atrophy of the skin is rare as a congenital condition, and is

known as xeroderma or parchment-skin, though that name is also employed to designate the milder varieties of ichthyosis. In this condition the integument of the feet and legs and hands and arms is most markedly affected. The skin is thinned, tense, and wanting in pigment; the epidermis is thin and shining; and the parts most affected are very sensitive. Idiopathic atrophy of the skin is a not uncommon acquired condition in old age. *Atrophia senilis* is really a physiological process, the general integument partaking in the diminution in size that occurs in all the tissues in old age. The subcutaneous fat gradually disappears; the skin becomes lessened in thickness, lax, wrinkled, and hangs in thin folds. All the elements of the integument save the pigment are atrophied; the decrease in the secretion of sweat and sebum causes a slight but persistent desquamation (*pityriasis tabescentium*); and the color of the integument gradually gets darker, either diffusely or in spots. *Verrucæ seniles* (senile warts), dirty yellow-brown accumulations of sebaceous scales, frequently appear, and are very prone to undergo carcinomatous degeneration. The condition is only pathological when, as is frequently the case, it is accompanied by violent itching.

Circumscribed atrophies of the skin are of common occurrence, and may be idiopathic or symptomatic. In *atrophia maculosa et striata*, *maculæ et striæ atrophicæ*, or *vergetures* (Fr.), they occur as stripes or spots that at first are red, but in the course of time become purplish, grayish, or silvery white, smooth, scar-like depressions. In its commonest form the affection appears as a number of parallel stripes 1–2 mm. wide and 1 to several inches long. The streaks are isolated, rounded or oval, and pinhead to finger-nail in size. They may appear anywhere on the body, but are most commonly seen upon the neck, thighs, buttocks, and abdomen. They occur in both sexes, grow to their full size very slowly, and, once formed, are permanent. As they cause no subjective symptoms at all, their presence is frequently discovered only by accident.

Localized atrophy of the skin occurs after injury to the nerve supplying the part affected. *Atrophoderma neuriticum*, glossy skin, *Glanzhaut* (Ger.), gives us a



FIG. 139.—*Striæ atrophicæ*.
Case of Dr. A. H. Ohmann-Dumesnil.

thinned, smooth, glossy, and apparently varnished skin, of a pinkish or reddish color. The natural lines are obliterated, the hair is lost, and the nails become incurved. Vesiculation, ulceration, and gangrene sometimes take place; and the patients suffer from paroxysmal neuralgic pains. The fingers are the parts usually affected.

Under the name of *cutis laxa* is known a condition usually hereditary, in which the normal extensibility of the skin is greatly increased, and its usually firm attachment to the deeper tissues is diminished, so that it can be drawn out in folds like a sheet of rubber tissue. The condition causes no inconvenience to its bearers, some of whom are put on exhibition as rubber- or elastic-skinned men.

Etiology.—Some forms of cutaneous atrophy are of unknown origin, while others are due to obvious mechanical causes. Concerning the cause of the more general and congenital cases and of *cutis laxa* we are in ignorance. Partial atrophy is usually due to laceration of the subcutaneous tissues, either from external violence, blows, the pressure of corns, favus crusts, etc., or from internal distention, as occurs in *anasarca*, *ascites*, abdominal tumors, pregnancy, and excessive development of fat. It also follows *lepra* and *syphilis*. Glossy skin occurs in parts where the circulation is bad, and that have been exposed to cold; and also in *gouty*, *rheumatic*, and other general conditions. Some cases are distinctly due to nerve injuries, a *neuritis*, perhaps accompanied by muscular atrophy, being the cause of the trophic changes in the skin.

Pathology.—In the various forms of atrophy of the skin the epidermis and the mucous layer are thinned, the papillæ are flattened out, and the fatty tissue and vessels are much diminished in quantity. There is often a marked change in the connective tissue of the corium and subcutis. The bundles are much smaller than normal, are arranged in parallel rows instead of being interlaced, and fat-cells are not present in their meshes. In some cases there is fatty, amyloid, or colloid degeneration of the elements of the skin. In an advanced case of *cutis laxa* Ohmann-Dumesnil found myxomatous degeneration of the cutaneous tissues to be present.

Diagnosis and Prognosis.—The diagnosis of these various conditions presents no difficulties. The prognosis is generally bad; most of the changes are permanent, and we are limited in treatment to the relief of the symptoms that they may cause. The neuritic form tends to get well when its cause is removed.

No. 134. *Cocaine Ointment.*

| | | | | |
|------------------------|---|---|---|----------|
| Rx Cocain. hydrochlor. | . | . | . | 1 part |
| Petrolati | . | . | . | 20 parts |

Treatment.—This can only be symptomatic, and consists of the use of emollient applications (No. 26, p. 70, No. 29, p. 74, No. 54, p. 113, Nos. 65, 66, 67, p. 135) to relieve the dryness, and antipruritics (Nos. 11, 12, p. 56) to mitigate the itching

of the senile forms of the malady. Glossy skin tends to get well if protected from cold and other external irritants. Cold or very hot water may be used to relieve the pain; as also a cocaine ointment, 5 to 10 per cent. (No. 134, p. 288).

SCLERODERMA.

Synonyms.—*Sclerema adutorum*, *dermatosclerosis*, *morphœa*, *sclérodémie* (Fr.), *Hautsclerem* (Ger.).

Definition.—A chronic disease of the skin, characterized by circumscribed or diffuse, waxy or pigmented induration of the skin, with subsequent rigidity, fixation, and atrophy of that organ, and ending in resolution or permanent cicatricial fixation, and sometimes in death from marasmus.

Symptoms and Course.—This rare disease begins insidiously, without any local or general symptoms, or accompanied only by slight malaise and rheumatoid pains, and itching and formication in the parts about to be affected. It begins with the stadium elevatum, in which larger or smaller areas of the skin become œdematous, thickened, hardened, and elevated. The integument of the affected parts is moderately tense, immovable, of a rosy or ivory-like and waxy appearance, and very shiny; the parts look as if they were frozen, and are sometimes covered with a slight desquamation. The spots spread slowly by peripheral extension to a certain size; and the malady may retrogress spontaneously at this period of the disease, but it usually goes on to the second stage, the stadium atrophicum. Here the affected skin is shrunken, thinned, scar-like, depressed, and shiny. It is firmly adherent to the subjacent tissues, which are also involved in the process, and its color may be normal, or white and ivory-like, or pigmented, or even bronzed. Two distinct forms are to be mentioned, in accordance with whether the process remains a localized one or spreads over large areas of skin or the whole body.

In *scleroderma circumscriptum* or *morphœa* one or more rounded or oval areas or stripes of varying size appear, which, after passing through the hypertrophic stage above mentioned, develop into flattened or depressed lesions of a dead-white, ivory, or pinkish color, usually bordered by a violaceous or pinkish zone of dilated vessels. The patches are dry and smooth; the natural lines of the skin are obliterated; the hairs disappear; and the surfaces may be corrugated from contraction. They may long remain in this condition, and then they may slowly fade away or gradually spread by the appearance of new lesions at the margins and their slow coalescence with the original patch. The affected areas may appear anywhere, but are most often seen upon the limbs, head, and neck; they usually persist for many years; atrophy of the deeper tissues and adhesion to the skin, with subsequent contractures and deformity, sometimes occur; but there are no symptoms, either special or general, save slight itching and an absence of sweat. Sensibility is usually undisturbed.

Scleroderma universalis is the variety of the disease in which larger areas or the entire skin is affected. After perhaps the indefinite prodromal symptoms above mentioned the affected skin becomes obscurely œdematous, elevated, and slightly reddened; and it gradually becomes more and more indurated until it assumes the consistency of hard leather. The integument looks waxy, or is of a dirty yellow color; the margins of the infiltration fade gradually into the normal skin, and the affected area is firmly bound down to the subjacent parts. Finally the skin becomes thinned and hide-bound, and apparently too small for its contents. The muscles become affected with a true interstitial myositis, followed by atrophy, and even the fasciæ and bones become involved; so also do the mucosæ, more especially of the mouth and throat. Sensibility is little affected, though there may be a troublesome pruritus. The secretion of the sweat and sebum is diminished or absent. The firm tension of the skin of the affected parts renders them very liable to injury from slight causes, and ulcerative processes are readily set up.

The appearance of a well-developed case varies with the part affected. The face is fixed—gorgonized, as it were; the features are immovable and stony; the mouth can be opened with difficulty; the lips are shortened; the gums are shrunk; the nostrils are compressed. The strained, pallid skin and the expressionless features give the face a ghastly, corpse-like appearance. If the limbs are affected, the fingers are semiflexed and rigid (*sclerodactylie*), the nails are hypertrophied (*onychogryphosis*), and all the joints covered by the sclerosed skin are fixed and rigid. Walking may become impossible. On the chest wall the breasts are flattened and almost obliterated, and respiration is interfered with.

The malady often remains stationary for years. In the early stages recovery may take place, but in the later ones, when the lesions have become atrophic and the parts fixed, a return to the normal is impossible. The patients die of marasmus or of intercurrent disease.

Etiology.—We know nothing certain in this regard. The malady occurs much oftener in females than in males, and most frequently in youth or early adult life. Attacks of rheumatism and of erysipelas, privation, exposure, and mental worry seem to be etiological factors in some cases, but often there is no such history. It is probably connected in some way with a lesion of the central nervous system.

Pathology.—This is equally obscure. There is a small-celled new growth around the vessels, with subsequent thickening and atrophy of these structures and obstruction to the flow of the blood and the lymph. The epidermis is thinned and pigmented; the fat is atrophied, and the ordinary connective tissue and elastic fibers are enormously increased. The contraction of this new tissue finally binds all the structures of the skin together into a sclerotic mass.

Diagnosis.—This is usually not difficult in view of the solid, white, indurated, parchment-like skin. Vitiligo is milky-white in color and shows no structural change. *Sclerema neonatorum* occurs immediately after birth, while ordinary

scleroderma is rare in very young children. Keloid is distinctly limited in area, and hypertrophic. The trophic changes of syringomyelia and lepra are accompanied by analgesia, and in the former there is the marked change in the temperature-sense. Cancer *en cuirasse* may greatly resemble a scleroderma, but it is usually secondary to cancer of the breast; the characteristic nodules are deep-seated, firm, and pigmented; there is unilateral œdema and lymphangitis, as well as an indurated margin, great tendency to ulceration, and a rapidly fatal course.

Prognosis is doubtful. Some cases, more especially in the earlier stages, and in the circumscribed forms known as morphœa, recover. Other cases last for years without the general health becoming affected. After atrophy has set in restitution to the normal is impossible; and if recovery occurs at all, it is with thinned and adherent skin, deformity, and fixation of the joints. Perhaps 20 per cent. of all cases terminate fatally.

Treatment.—Recovery occurs spontaneously in some cases, which accounts for some of the cures reported from the use of the iodide of potash, mercury, arsenic, etc. Removal to a dry and equable climate, together with tonics, iron, strychnine, and cod-liver oil, and general hygienic measures, are undoubtedly of importance. Massage of the affected parts is especially useful, and should be combined with daily hot-water or sulphur or vapor baths. Galvanism has done good in some cases. The thorough inunction of olive-oil into the affected skin two or three times daily is an excellent measure, either alone or combined with massage or electricity.

SCLEREMA NEONATORUM.

Synonyms.—Scleroderma neonatorum, sclerema of the new-born, *algidité progressive* (Fr.).

Definition.—A progressive, hard œdema, with discoloration and coldness of the skin, appearing at birth or shortly thereafter, and usually terminating fatally within a few days.

Symptoms and Course.—Sclerema of the new-born is seen chiefly in foundling asylums among the prematurely born or weakly children of the poorer classes. It appears at birth or a few days after it, beginning as a hard œdema of the skin of the lower extremities, which gradually spreads over the rest of the body. In exceptional cases it begins on the head or face, and in other exceptional cases it remains localized in certain areas and does not spread over the entire body. The skin at first is swollen, yellowish-white or waxy-looking, shining, hard, and cold. In a short time the œdema goes down, but the skin remains hard and mummified, and is of a dusky reddish or livid color. It is firmly attached to the deeper tissues, and cannot be wrinkled or pinched up into folds. As the process spreads to the subcutis and the muscles the joints become immovable from the hardening of the surrounding tissues; the face is fixed and motionless; and the entire body is rigid

and cold as if in a condition of rigor mortis. The pulse falls to 60; the respirations are shallow from the stiffening of the chest walls, and are 14 or less to the minute, and the temperature is several degrees below normal. The infant's vitality may be so depressed that even the cry is absent. The fixation of the facial muscles is rarely complete, but their stiffness interferes with or may entirely prevent suckling. Icterus is commonly present; diarrhea and vomiting may set in, and the cases in which the entire integument is affected usually die before the ninth day. Partial cases sometimes recover.

Etiology.—The immediate cause of the sclerema is a retardation of the circulation in the cutaneous capillaries, possibly due to disease of the vessel walls. Congenital syphilis, intra-uterine, pulmonary, and intestinal disease, exposure to cold, etc., are supposed to be among the factors that cause its appearance.

Pathology.—The epidermis of the scleremic skin is thickened, and the connective tissue is increased, while the fatty tissue is mostly or entirely gone. The lumen of the vessels is much diminished. Some observers have found a partial crystallization of the fat that remains in the connective-tissue cells.

Diagnosis.—The indurated œdema, the color, the coldness, together with the age of the patient, are characteristic. The only malady with which it might be confounded is scleroderma; but this latter is very rare indeed in infants and has a much more chronic course.

Prognosis.—This is bad, since most cases die in a few days. Signs of bad omen are rapidly increasing weakness, quick spreading of the induration, a greatly sub-normal temperature, the occurrence of hemorrhage, icterus, etc. A few of the incomplete cases recover.

Treatment.—We may endeavor to compensate for the fall in temperature by keeping the child in an incubator, enveloping it in cotton-wool, or by the frequent use of hot baths. Nutrition must be kept up as well as possible by artificial feeding if the child cannot nurse, and both food and stimulants must be introduced by means of a tube passed through the nose if the rigidity of the mouth and throat is such that they cannot be administered in the ordinary way. Systematic massage, and rubbing the body with warm oil or camphorated alcohol, are useful to stimulate the circulation. Galvanism of the sympathetic nerve has been recommended.

2. ATROPHY OF THE PIGMENT.

Absence of the pigment of the skin occurs as a congenital or an acquired condition, and may be partial or general. The form known as albinismus is not an atrophy; it is a congenital deformity of the skin and its appendages, which can most appropriately be considered here. Acquired atrophy of the pigment is known as vitiligo, and when the hair alone is affected, as canities. Loss of pigment, together with atrophy of other elements of the skin, occurs in morphœa and in maculæ and



TYPOGRAVURE.



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LEUCODERMA.

PLATE XLIX.

striæ atrophicæ, which have already been considered. Some of these affections are much commoner in the colored than in the white race.

ALBINISMUS.

Synonyms.—Congenital achroma, congenital leucoderma, albinism.

Definition.—A congenital absence of pigment in the skin and its appendages.

Symptoms and Course.—Albinism is an anomaly that occurs in the lower animals as well as in man, and may be general or partial. In albinismus universalis the pigment is congenitally absent from all the normally pigmented surfaces of the body, the skin, the hair, and the iris, choroid, and retina. The integument is milky white or pinkish in color; the hair, which is usually very fine and silky, is white or yellowish white. The eyes look red, from the absence of pigment in the iris, which is of a pale-bluish or pinkish hue; there is photophobia, the pupils are continually in motion, and nystagmus is often present. Individuals so affected are known as albinos or kakerlaken, and are usually deficient in stature and in mental and physical vigor, though their general health is not necessarily bad. They are found in all races.

Albinismus partialis is a circumscribed congenital absence of pigment, appearing as single or multiple, larger or smaller spots, streaks, or areas of a white or pinkish-white color. The skin otherwise is perfectly normal. The discoloration is sometimes symmetrical, and occasionally follows the track of certain nerves. The hair over these areas is colorless; but congenital absence of pigment in hair situated on normally colored skin also occurs, being known as canities or poliosis circumscripta. The affection is much commoner in the negro than in the white race. The spots usually remain stationary, but sometimes they spread; more rarely the pigment is redeposited spontaneously in the affected area.

Etiology.—The cause of the deformity is entirely unknown. It is sometimes hereditary, occurring in several members of a family in one or several generations. Many cases occur, however, as isolated examples.

Pathology.—The absence of pigment is the only change in the skin and the other tissues.

Diagnosis and Prognosis.—The entire absence of any symptom, either subjective or objective, other than the want of pigment, is sufficiently characteristic. The prognosis as to cure is bad; we know of no measures that will cause the redeposition of the pigment.

Treatment.—This is practically useless. Chrysarobin and salt baths have been recommended, but have given no results.

VITILIGO.

Synonyms.—Leucoderma, leucoderma acquisita, acquired achroma.

Definition.—Vitiligo appears as one or more sharply limited, rounded or irregu-

lar, smooth white spots, increasing in size by peripheral extension, and surrounded by a zone of abnormally pigmented skin.

Symptoms and Course.—Vitiligo is rare in this country, but is commoner in the tropics and among the dark races. It usually begins during adolescence or early adult



FIG. 140.—Leucoderma.
After Van Haren-Noman.

life, appearing as one or more circular, pigmentless spots, with smooth, level, and unaltered surfaces, and whitish or milky in color. They are invariably surrounded by a well-defined, darkly pigmented border. The size of the spots varies from that of a small coin to that of the palm of the hand; they increase by peripheral extension; new ones may appear from time to time, and by the coalescence of adjacent spots larger irregular leucodermic areas, bordered by curved lines, are formed. Their number is from one to a dozen or more, but they are usually not numerous, and they are oftensymmetrically arranged upon the body. The hairs on the affected areas are usually white (poliosis). The spots ap-

pear anywhere, but are most commonly seen upon the trunk and the backs of the hands. Their course is very chronic; they extend slowly for years, and then may remain stationary; sometimes they increase until the greater part of the integument is involved. They look worse in summer, when the normal skin is most deeply pigmented. Beyond the change in color there is no disturbance or alteration in the appearance or in the functions of the skin. Symptomatic vitiligo occurs in the course of lepra and syphilis.

Etiology.—Vitiligo is probably trophoneurotic in origin, but its exact cause is unknown. Some cases occur after the acute febrile diseases, and others with various affections of the nervous system.

Pathology.—There is atrophy of the pigment in the whitened spot, together with an increase of the same element at its margins. It appears as if the pigment were gradually pushed outward as the process advances, so that it accumulates in the healthy tissue just outside the affected area.

Diagnosis.—The whitened spots surrounded by a dark border must be distinguished from the discolorations of chloasma, chromophytosis, morphœa, and leprosy. In chloasma the color is yellow or brownish, and there is no accumulation of pigment at the margins. In chromophytosis the spots are yellowish or reddish brown; the skin around them is normal in color; there is desquamation, and the microscope reveals the presence of the characteristic parasite in the scales. In morphœa the atrophy is characteristic; as is the anæsthesia, and possibly the presence of tubercular deposits elsewhere in the skin, in *lepra nervorum*.

Prognosis.—Leucodermic spots usually increase slowly in area until a considerable extent of the skin is involved, and then remain stationary. In exceptional cases the normal pigmentation of the skin gradually returns.

Treatment.—This can consist only of care of the general health, the use of tonics, roberants, etc. There is little to be hoped for from the local treatment, though penciling with cantharidal solutions or collodion and the use of galvanism have been recommended.

CANITIES.

Synonyms.—Poliosis, blanching of the hair.

Definition.—Whitening of the hairs from the atrophy of their pigment.

Symptoms and Course.—Atrophy of the pigment of the hair causes it to change from its normal color to a grayish or a silvery white. It may be a congenital or an acquired condition. All the hair may be affected, or only part of it, and in the latter case the affected hairs may appear in scattered tufts or cover a definite area of surface, or they may be distributed more or less abundantly among the normally pigmented structures.

Congenital complete canities is always present in albinismus, where the hairs share with the other tissues of the skin in the general absence of pigment. Under other conditions it is usually partial, the uncolored hairs being seated on pigmented or on non-pigmented skin.

Acquired canities occurs as a physiological change in old age, either because the papillæ of the hair no longer produce pigment, or the epithelial cells of the shaft can no longer take it up; but it sometimes appears comparatively early in life, being apparently due to an hereditary predisposition. It begins in the scalp around the temples, and in the beard, and later extends to the vertex. As a pathological con-



FIG. 141. — Leucoderma.
After Joseph.

dition it may occur at any age. Like the congenital form, it may be complete or partial. Complete acquired canities is almost always a permanent condition, yet Wilson records a case in which the hair was gray in the winter and colored in the summer. As a partial affection it is seen in vitiligo, where patches of uncolored hair occur upon the whitened areas of skin, in the first hairs that grow upon areas affected with alopecia areata, and as a simple white tuft or tufts of hair in the midst of normally colored appendages.

Acquired canities is often an hereditary affection, occurring in families and appearing either as a general blanching or as grayish or white tufts or patches. It usually comes on slowly, but, though the fact has been denied by Hebra, Kaposi, Joseph, and others, authentic cases are recorded in which it has appeared with great rapidity. Thus in Landois's case of a patient suffering from delirium tremens, the hair of the beard and head turned gray overnight; and Raymond and Vulpian record an instance in which the hair turned white in the course of two days in a patient suffering from a severe neuralgia following mental strain. Intense mental depression, psychic influences, neuralgias, wasting diseases, the fevers, etc., may cause grayness and whitening of the hair in a comparatively short space of time.

Ringed hair, *pili annulati*, is a very rare condition, in which the hair is marked with alternate white and colored bands of varying size. Occasionally the whitening affects only a portion, either distal or proximal, of the affected hairs, as in the cases reported by Falkenstein and others.

Etiology.—Congenital canities is a deformity rather than a disease. The diminution in the activity of pigment formation in the *papillæ* that is normal in old age occurs comparatively early in life in some families. It also occurs during the course of severe neuralgias in the hair of the affected area, after the specific fevers, more especially after scarlet and typhoid, following prolonged nervous strain, mental or bodily in origin, after nervous shocks or prolonged exposure to the emotions of grief or fear, etc.

Pathology.—The color of the hair depends on the quantity and distribution of the pigment in its shaft. When the peripheral layer of the shaft contains air and not pigment, though the central part may be normally colored, the hair is white. There is usually an actual diminution of the amount of pigment. Cases of canities of sudden occurrence seem to be due to the appearance of air-bubbles in the shaft of the hair. Alternate colors are apparently caused by the occurrence of successive periods of activity and rest in the pigment-producing functions of the follicle.

Prognosis.—This is in general bad, though in exceptional cases the affected hair does regain its color. The canities after alopecia areata is usually temporary, and the same is sometimes the case with that following the fevers and general conditions of depressed vitality.

Treatment.—A radical treatment of canities is an impossibility, since we possess no means of stimulating the pigment supply of the *papillæ*. In the premature forms and the partial ones the use of general tonics, with arsenic and local stimulation, may

lie of some benefit. Pilocarpine nitrate, given hypodermically in quantities of $\frac{1}{10}$ grain, or the tincture of jaborandi in 10-drop doses, may be employed, as also may the faradic brush.

In almost all cases, however, these means fail us, and our only resource is to use dyes to stain the uncolored hair. The objections to their employment are that they discolor the scalp, render the hair dry and dead-looking, and require to be frequently applied to the part of the hair next to the skin on account of the rapid growth of the pilous structures. The fatty oils give a darker color to the hair, and may be regularly employed as a dressing; the most useful of these are the oils of mace, walnut, and cassia. As true dyes the nitrate of silver, mercury, and pyrogallol are most frequently used. Paschkis recommends the following procedure: The hair is cleansed with soap and water, rinsed out with warm water, and dried. Then the pyrogallol solution (No. 135, p. 297) is brushed on the hair, from the root to the end, by means of a soft tooth-brush. This is allowed to dry, and then the silver solution (No. 136, p. 297) is applied in the same way. The stains of the skin that are very liable to occur accidentally may be removed with a 33-per-cent. iodide-of-potash solution. Anderson prefers the use of the bichloride of mercury, followed by a hyposulphite-of-sodium solution (Nos. 137, 138, p. 297). The nitrate of silver alone is, however, most frequently used (Nos. 139, 140, p. 297), exposure to the sunlight changing the hair to brown or black, in accordance with the amount and strength of the solution employed. Discolorations of the skin may be removed by washing the parts with a solution of the cyanide of potassium, or, more safely, with one of chloride of sodium. For the brown shades the pyrogallol dye (No. 141, p. 297) may be used. Whichever method is employed, the dyeing must be repeated every two or three weeks.

No. 135. Paschkis's Hair-dye No. 1.

Rx Pyrogallol 1 part
Aq. dest. 50 parts

No. 136. Paschkis's Hair-dye No. 2.

Rx Argent. nitrat. 1 part
Aq. dest. 80 parts
Aq. ammon. q. s. ad. solut. enasc. sedim.

No. 137. Anderson's Hair-dye No. 1.

Rx Hydrarg. bichloridi 1 part
Aq. dest. 250 parts

No. 138. Anderson's Hair-dye No. 2.

Rx Sod. hyposulphitis 1 part
Aquæ 8 parts

No. 139. Kaposi's Dye Formula No. 1.

Rx Argent. nitrat. 1 part
Ammon. carb. 150 parts
Ungt. simpl. 30 "

No. 140. Kaposi's Dye Formula No. 2.

Rx Argent. nitrat. 5 parts
Plumbi acet. 1 part
Aq. colognien. 1 "
Aq. rosæ 100 parts

No. 141. Pyrogallol Hair-dye.

Rx Pyrogallol 1 part
Aq. colognien. 2 parts
Aq. rosæ 40 "

Change of color of the hair other than whitening is an extremely rare condition ; Alibert and Beigel have reported such cases following severe fevers. Discolorations from the effect of external agents are more common. The excessive use of alkalis and alkaline soaps tends to turn the hair red ; oxygen and compounds containing it in readily separable (as peroxide of hydrogen) form lighten its hue ; the fatty oils, as those of mace, walnut, and chrysarobin, darken it. Various occupations give rise to accidental discolorations of the hair ; thus that of workers in cobalt-mines and indigo factories is liable to be stained blue, that of copper-smelters green, while those employed in crude aniline works frequently have their hair stained a dark reddish brown.

3. ATROPHY OF THE HAIR.

Atrophy of the hairs occurs as a quantitative change, as in the various forms of alopecia and in alopecia areata ; and as a qualitative one, as in several rarer and less important conditions, as atrophia pilorum propria, fragilitas, monilethrix, trichorrhexis nodosa, etc. It may be symptomatic, as in the atrophy that occurs with or after certain constitutional diseases, as syphilis, diabetes, phthisis, the fevers, etc., or it may occur idiopathically, unassociated with any disorder of the general system.

ALOPECIA.

Synonyms.—Calvities, defluvium capillorum, baldness, *Kahlheit* (Ger.).

Definition.—A diminution in the quantity of the hair.

Symptoms and Course.—Alopecia is really the name for the symptom of baldness which appears in the course of various diseases ; but it is used as a generic term for baldness from any cause, and is best considered as an entity. It is customary to distinguish several varieties, in accordance with the causation, time of appearance, etc., of the atrophy.

1. Alopecia congenita s. adnata. Most infants have plenty of hair at birth ; but in certain cases it is deficient in quantity, and in rare instances it is entirely wanting. The alopecia is usually partial, both in degree and in extent, the hair being simply thinner than normal over certain areas. But cases are on record in which the alopecia was complete over part or even over the whole of the body. Schultz has reported the case of a man thirty-five years old who never had any hair upon his body, save about ten short ones grouped around the corners of his mouth. Sometimes the hair grows in later in life ; Luce's case had no hair until its sixth year. The deformity—for it is this rather than a disease—seems to be hereditary and run in families, and even a hairless race has been reported by Hill as existing in Australia. Marked cases show other defects of the skin, general atrophy, or diminution or absence of the sudoriparous or sebaceous secretion, as well as defects of the teeth.



ALOPECIA AREATA.



ALOPECIA NEUROTICA.



TYPOGRAVURE.

ALOPECIA PITYRODES.



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ALOPECIA TOTALIS.

2. Alopecia senilis, senile calvities. This is the permanent loss of hair that occurs in old age; it is to a certain extent a physiological process, though it occurs most markedly in cases affected with seborrhea sicca. The hair turns gray, becomes dry and lusterless, falls out, and is not replaced. There is often a lanugo growth of hair before the definite defluvium sets in. The skin of the affected area is at first normal; but later it becomes atrophic, thinned, shining, and tense. The affection is always symmetrical in its spread, beginning at the vertex and spreading backward and forward; the hairs remain longest on the lateral portions of the scalp. Men are much more frequently affected than women, possibly on account of the difference in the head-gear of the sexes. It is curious that while atrophy of the hair of the scalp is the normal occurrence in old age, the hair on other portions of the body, as the beard and eyebrows, and also the vibrissæ, is rather increased in growth in old age.

3. Alopecia prematura, presenilis, or simplex. In this very common affection the process is similar to that in senile alopecia; but it occurs in younger subjects, often beginning between the twentieth and the thirtieth year, and is not preceded by grayness of the hair. Usually the baldness begins at the vertex and spreads anteroposteriorly; but it may begin on the temples at either side; it is always symmetrical. The process is a continuous one; as the hairs fall out fewer and fewer new ones, of decreasing length and thickness, are produced; finally lanugo hair, and then none at all, grows out. In exceptional cases the course of the affection is quite rapid, and baldness ensues in a few weeks or months; usually, however, it takes years before that is complete. The skin is left tense, smooth, and shiny, or covered with lanugo hair. The secretion of sweat and sebum may be increased; but many cases show no evidences of seborrhea. Both sexes are affected, but males more frequently than females, and more especially those with sedentary occupations. Not infrequently a tendency to the affection runs in certain families. Only the hair of the scalp is affected, and many of these cases have strong and luxuriant beards.

4. Alopecia symptomatica. Alopecia occurs as a symptom of various general and local affections in which changes of the hirsute skin take place. It may be partial or complete, temporary or permanent. The local affections of the hairy surface that are accompanied by ulceration or interstitial absorption are not infrequent causes of partial alopecia. Thus in the ulcerative syphilides and leprides, with variola and folliculitis, there is a direct destruction of the hair-follicles and a permanent baldness of the part affected. In favus, from the pressure of the mass of fungus, as well as in lupus erythematosus and the non-ulcerative syphiloderm, the same result is brought about by interstitial absorption. Seborrhea sicca is a common cause of general defluvium of the hair, especially in women; as also is erysipelas of the scalp. Trichophytosis and alopecia areata cause a temporary falling of the hair over the areas affected.

Many general affections are accompanied by a symptomatic falling of the hair, the

skin sharing in the general nutritive depression of the body tissues, and showing it most commonly in atrophic changes of the hair and the nails. This is notably the case in syphilis, where a general diffuse falling of the hair occurs as a regular symptom some three to six months after the infection. The hairs become dry, dull, brittle, and loose, and are shed with greater or less rapidity. The resultant alopecia may be slight or very well marked, and even the hair of the eyebrows and beard may be affected. Very often it falls out more or less completely in irregular patches, giving the scalp a characteristic "moth-eaten" appearance. In erysipelas the general affection causes more or less defluvium, in addition to the local action of the disease upon the scalp. The infective fevers, typhoid, scarlet, variola, etc., are regularly followed by falling of the hair; and I have seen it occur after major operations with prolonged convalescence. In all these cases the hair usually grows out again, often with increased luxuriance.

Symptomatic falling of the hair also occurs with diseases of the nervous system, epilepsy, migraine, certain psychoses, and after nervous shocks. I have seen complete alopecia affecting not only the head, but the eyebrows, eyelashes, mustache, beard, the axillary and pubic regions, and the trunk and limbs, occurring very rapidly in consequence of worry and insomnia. Here the hair may or may not grow again.

5. Alopecia pityrodes, alopecia furfuracea, or pityriasis capitis, is perhaps the commonest form of baldness, and occurs associated with a chronic seborrhea, the influence of which malady in causing atrophy of the hair has been already referred to. It occurs at all ages, but begins most frequently between the twentieth and the thirtieth year; males are most often affected, and in them the beard and eyebrows are sometimes involved as well as the scalp. It begins as an ordinary dry seborrhea, with slight reddening, scaling, and itchiness of the scalp. The scales may be white, dry, and composed chiefly of epithelium; but more commonly they are grayish, greasy, and seborrheal. The nutrition of the hairs is interfered with; they become harsh, dry, lusterless, and fall out slowly. After remaining in this condition for years, a more rapid falling begins, and baldness soon sets in. It usually commences at the sides of the temples and gradually spreads to the vertex; in women it begins at the part. When the baldness is complete the seborrhea ends, and the scalp is left thinned, shining, and atrophic, as in the other forms of alopecia. The affection occurs in infants, and frequently causes thinning and loss of the hair, but no permanent baldness.

Etiology.—Alopecia senilis is a physiological change, being a part of the atrophic changes of old age. So also is premature alopecia, which is peculiar only in its early occurrence. Alopecia adnata is a deformity of unknown origin. Alopecia symptomatica is due to the disease with which it occurs; it occasions either a direct destruction of the hair-follicles, or such nutritive depression of the hairy skin that the pilous structures fall out. Alopecia furfuracea is caused by the same agencies

that cause seborrhea, among which may be mentioned neglect of the hygiene of the scalp, and the wearing of heavy hats and bonnets. It is possible that direct transfer of a contagion in the barber-shops is its essential cause. Lassar and Bishop produced an alopecia in the skin of healthy animals by rubbing in an ointment compounded of the epithelial detritus and hairs of a patient affected with the disease. Boeck, Malassez, Balzer, and others have described cocci and bacteria as the etiological factors. Definite proof of this, however, is still wanting.

Pathology.—In alopecia adnata there is an arrest of development of the pilous structures. Schede found in his cases that the hair-follicles were either absent or aborted and atrophic, while the other elements of the skin were normal. In the senile and premature alopecias there is a fibrous endarteritis of the follicular vessels; the epidermis and derma are thinned and shrunken; and the hair-follicles are atrophied and empty, or contain aborted hairs. Alopecia symptomatica shows atrophied follicles and hairs, or complete destruction of the pilous apparatus. In the furfuraceous form of alopecia the corium is atrophied, and its connective-tissue fibers have undergone more or less fatty and colloid degeneration; the sebaceous glands are shrunken; and the hair-follicles are filled with epithelial scales and rudimentary hair.

Diagnosis.—The general thinning and atrophy of the hair in the first three forms of the disease are sufficiently distinctive. In alopecia furfuracea the epithelial character of the scales and its symmetrical appearance will distinguish the affection from seborrhea sicca, which is asymmetrical and has grayish-white, greasy scales. Trichophytosis capitis has sharply limited patches with nibbled-off hairs; and patches of ringworm will frequently be found on other portions of the body. Alopecia areata has sharply circumscribed patches, at least at first, and the skin is normal, showing neither scaling nor induration.

Prognosis.—The prognosis of alopecia congenita is usually good; in most cases the hair grows in time, though not with the abundance that characterizes the normal skin. That of alopecia senilis is bad; in rare cases only the hair grows again. Alopecia prematura, if not too far advanced, can be stopped; but when the scalp has become hide-bound and atrophic, treatment is useless. To determine the prognosis in individual cases, the hairs that fall out in a day should be collected, and, in the male, the number of pointed and uncut as compared with the number of cut hairs noted; in the female, where all the hairs are uncut, those under and over 6 inches in length should be counted. If the pointed hairs or those under 6 inches in length exceed one quarter of the entire amount, the disease is progressive, and the prognosis is bad. The prognosis of symptomatic alopecia varies with the cause. If it is due to nutritive depression alone it is good; the hair usually grows in as abundantly or more so than before. If it is due to atrophic changes the prognosis is hopeless. Alopecia furfuracea is of fairly good prognosis if it is not too far advanced, if atrophy has not set in, and if the cause can be removed.

Treatment.—Systematic treatment is of importance in most varieties of alopecia,

but more especially in the symptomatic and furfuraceous forms, as well as for prophylactic purposes in cases where the family history shows a tendency to the early advent of baldness. It consists of the use of tonics and all measures calculated to improve the nutrition of the tissues in general and of the skin in particular. Nourishing diet, fresh air, exercise, bathing, etc., the administration of iron, strychnia, phosphorus, arsenic, and cod-liver oil, will be found useful. Shoemaker recommends the tincture of ignatia in 10-drop doses three times daily. Attention to the hygiene of the scalp is of the very greatest importance. This consists essentially in the careful combing and brushing of the hair, and the free use of soap and warm water on the scalp. The use of heavy and closely fitting head-gear is to be avoided as far as possible.

The local treatment consists in all cases in the endeavor to stimulate the nutrition of the hair-follicles by causing a temporary and artificial hyperemia of the skin in which they are seated. The thoroughness of the frictions, brushings, and shampoos by means of which the various applications are applied is of more importance than the nature of the special medicament that is used; for we know of no specific drug which increases the nutritive activity of the hair-papillæ. In most cases the applications are better made with a stiff brush than with the fingers; and in all cases they should be vigorously rubbed into the scalp rather than applied to the hair. As most of them dissolve and remove from the surface of the scalp and hair the fatty substances necessary for their healthful growth, it is well to use a moderate amount of vaseline, benne-oil, or a pomade after applying them.

Alopecia adnata, as a rule, requires no treatment; the hair grows of itself in the course of time. Frictions with green soap or with the green soap tincture (No. 5, p. 43), followed by a stimulating application (No. 142, p. 303), may be used if treatment becomes necessary. Senile alopecia is best left alone; the condition is almost always a permanent one.

Presenile alopecia is an affection for which we are frequently consulted, and in predisposed cases the prophylactic measures above described should be carefully and systematically carried out. General treatment is often required; for there is an undoubted connection between the early appearance of baldness and dissipation, overwork, worry, etc. Hypodermic injection of $\frac{1}{12}$ to $\frac{1}{8}$ of a grain of the muriate of pilocarpine has done good in the hands of Schmitz, Schuller, and others. Static electricity is recommended by some authorities. In mild cases a bicarbonate-of-soda lotion (No. 143, p. 303) should be rubbed into the scalp every day or every other day. More advanced cases require stimulating applications of greater power (Nos. 142, 144, p. 303). Naphthol or resorcin ointments (No. 37, p. 82, No. 41, p. 100, No. 48, p. 105, Nos. 123, 125, p. 243), or the combinations of naphthol and sulphur with green soap (No. 46, p. 104, No. 55, p. 115), can be employed. Ihle's resorcin lotion (No. 145, p. 303) may be rubbed into the scalp daily with a piece of flannel. Tar applications are recommended by Piffard (No. 146, p. 303). The

sublimate lotion (No. 148, p. 303) and a 15-per-cent. tannic-acid ointment (No. 147, p. 303) are also useful.

No. 142. Stimulant Lotion.

℞ Tra. capsic.
 Tra. cantharid. āā. 1 part
 Spts. cognien. 8 parts

No. 144. Quinine Lotion.

℞ Quin. sulphat. 1 part
 Spts. vini Gallici 60 parts
 Aq. cognien. ad. 100 "

No. 146. Piffard's Tar Lotion.

℞ Ol. rusci
 Ol. lavandul. āā. 1 part
 \ Ol. pini sylvestri 50 parts

No. 148. Sublimate Lotion.

℞ Hydrarg. chlor. corr. 1 part
 Aquæ 500 parts

No. 150. Naphthol Spirit.

℞ β-naphthol 1 part
 Alcohol absol. 200 parts

No. 143. Sodæ Bicarbonate Lotion.

℞ Sod. bicarb. 1 part
 Aq. dest. 50 parts

No. 145. Ihle's Resorcin Lotion.

℞ Resorcin. albiss. 10 parts
 Ol. ricini 90 "
 Spts. vini 300 "
 Bals. Peruv. 1 part

No. 147. Tannic-acid Ointment.

℞ Ac. tannic 1 part
 Ol. ricini 2 parts
 Adip. lanæ 4 "

No. 149. Lassar's Sublimate Lotion.

℞ Hydrarg. bichlorid. 1 part
 Glycerini
 Spts. cognien.
 Aquæ āā. 300 part.

No. 151. Lassar's Salicylic-acid Ointment.

℞ Ac. salicyl. 2 parts
 Tra. benzoin 3 "
 Ol. bubuli 100 "

The treatment of alopecia symptomatica is essentially that of the underlying disease. General antisymphilitic treatment, together with the use of the sublimate lotion (No. 148, p. 303) or the white precipitate ointment, is appropriate for the luetic alopecia. Erysipelas, the infective fevers, diabetes, etc., must be appropriately treated, while any one of the stimulating applications above mentioned may be used. As a rule, the alopecia gets well of itself.

Alopecia furfuracea is so common a cause of baldness that its prophylactic treatment in cases affected with seborrhea of the scalp becomes a matter of importance. The means to be employed are essentially the same as those for seborrhea (pp. 64, 65), and must be used steadily for months, combined with careful washing, combing, and brushing of the scalp. In advanced cases the scales should be removed with soap and water, or the tincture of green soap (No. 5, p. 43), or borax and water, and the scalp and hair then thoroughly rinsed. Any one of the various stimulating applications can then be used. Sulphur is a very valuable remedy in this affection. It can

be used as ointment (No. 25, p. 64), applied every night at first, and less often as the desquamation lessens. The head should be thoroughly washed every three days. The mercurial ointment recommended by Bronson (No. 23, p. 64) and the resorcin ointment (No. 20, p. 64) are efficacious.

The treatment advocated by Lassar is based upon his belief in the parasitic origin of this form of baldness. It is somewhat troublesome, but has proved fairly satisfactory in my hands. The head is first lathered with strong tar soap for ten minutes, and then washed out with first warm and then cold water. The scalp is dried, and the sublimate lotion (No. 149, p. 303) applied. Then the scalp is dried by rubbing in the naphthol spirit (No. 150, p. 303), and anointed with a salicylic-acid ointment (No. 151, p. 303).

ALOPECIA AREATA.

Synonyms.—Area Celsi, porrigo s. tinea decalvans, alopecia circumscripta, *pelade* (Fr.), *die kreisfleckige Kahlheit* (Ger.).

Definition.—Loss of hair, causing the appearance of one or more circumscribed white bald patches of varying size and shape, sometimes spreading to more or less complete baldness.

Symptoms and Course.—Occasionally after a period of general ill health, with localized headache and pruritus, but more commonly with no prodromal symptoms at all, there appear upon the hairy surfaces of the body one or several areas of baldness. The advent of the disease is sudden; the hair may come out overnight, and the denuded patch be discovered by the patient or his friends; in other cases the loosened tuft of hair is accidentally pulled out. The hairs are not broken off, as in ringworm; they fall out in their entirety. The denuded areas are almost always round, but they may be elongated or band-shaped; occasionally they follow zigzag or irregular tracks. The site of the alopecia is most commonly the scalp, and next most frequently the beard; other regions, such as the axillæ, pubes, and the trunk and limbs, are much more rarely affected. In exceptional cases the falling of the hair occurs more diffusely; the areas are not well marked; and the general appearance of the malady on the scalp is like that of alopecia furfuracea.

The denuded areas in the beginning are usually small, from $\frac{1}{2}$ to 1 inch in size; they often spread with rapidity until they have attained a certain size, and then remain stationary. One only, or a few, may be present at one and the same time; but not infrequently patch after patch forms, the earliest ones being already covered with lanugo hair and progressing to recovery while the latest are appearing. Adjacent areas may coalesce so as to form irregular bald spots bounded by curved lines. In these composite patches, however, a thin and irregular band of lanugo or atrophic hair usually remains to mark the original boundary of the area. Finally, in some cases, the number of patches may be so great that complete baldness results,



TYPOGRAVURE.

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ALOPECIA AREATA.

PLATE XLV.

and all the hair, not only of the head, but also of the beard, axillæ, pubes, and the general surface of the body, may be lost.

The skin of the affected areas is first normal, though whiter than usual; it is entirely bald, or shows only a few scattered hairs, but the orifices of the hair-follicles are distinct; later on it appears shrunken, thinned, and quite smooth. Sensation is usually normal, though in some cases there is anæsthesia. There is absolutely no inflammatory action or scaling. In the early stages, while the patches are spreading, the hairs at the margins may be readily removable, or stunted and atrophic; later on, when the disease is not progressing, they are healthy and firmly seated.

The course of the disease varies a good deal. In benign cases the spots are few in number and remain small. After lasting for a number of months new and firmly seated hairs begin to grow at their periphery, and they get smaller; in other cases a fine lanugo growth appears over the whole patch, which in the course of time becomes stronger and pigmented. In malignant cases the patches are numerous, spread rapidly, and coalesce, and a general and more irregular falling of the hair occurs; in these instances the alopecia, more especially in children, is apt to become universal. Relapses are not infrequent in both forms; recovery takes months, but is the rule, especially in young individuals.

Etiology.—The causation of alopecia areata is still a matter of dispute; and it is possible, as Crocker holds, that there are grouped under this designation several distinct diseases, some of which are parasitic and others neurotic in origin. Many of the cases seem to point distinctly to the nervous system as their point of origin. The preliminary headaches, the sudden onset, the anæsthesia that is sometimes present, and the cases reported as following nerve injuries and mental shocks are of this category. Mibelli, Pantoppidan, and Joseph have seen alopecia areata occur in men and animals after surgical injuries to the cervical nerves.

Parasites have been described as the etiological factor by a number of observers, Gruby, Bazin, Thin, Von Sehlen, Robinson, etc. But their results do not agree with one another; in some a bacterium and in others a micrococcus have been described; and many competent bacteriologists have failed to find any characteristic microörganism at all. It is true that the disease seems occasionally to occur in epidemics; such have been described by Voillard and Vincent, Feulard, and others as occurring in regiments and schools. Dermatomycoses, however, invariably begin slowly, start in distinct foci, spread gradually, and are always accompanied by symptoms of inflammation, redness, swelling, vesiculation, and crusting.

Pathology.—This also is still a matter of debate. The marginal hairs of the patches show atrophic changes. There is an infiltration of the upper part of the corium, more especially of the papillæ, with new small round cells, and an atrophy of the hair-follicles, roots, and the sebaceous glands. Giovannini, who has examined sections from no less than twenty cases, concludes that the process is a deep-

seated folliculitis. Regarding the cause of this folliculitis no more can be said than has been stated under the etiology.

Diagnosis.—This is rarely a matter of difficulty. The sudden appearance of the bald areas, their rapid extension, their circular form, the absence of nibbled-off hairs, scales, and crusts, the smooth and shining skin, with the occurrence only on the hairy portions of the body, are sufficiently characteristic. Nevertheless the affection must be distinguished from trichophytosis capitis, favus, lupus erythematosus, and the baldness caused by burns and ulcerative processes, as well as from the other forms of alopecia. Ringworm begins at one point as a small inflammatory papule or patch; it spreads slowly; is circular in form; has frayed and broken-off hairs over its surface; shows signs of inflammation, redness, papules, vesicles, crusts, and scales; occurs also on the non-hairy parts; and the fungus can be readily demonstrated in the hairs and scales. Chronic cases of ringworm, in which the circular patches have disappeared, and in which there is a general alopecia and scaling, are more difficult to distinguish; yet here also the signs of inflammation, and the presence of some characteristic broken-off hairs, together with the detection of the fungus, will serve to prevent error. In favus there are no circumscribed denuded areas; the characteristic sulphur-yellow crusts or powdery scales are present; the malady is very slow, inflammatory, and leaves cicatricial tissue behind; and the microscope readily reveals the fungus in the crusts. Lupus erythematosus is inflammatory, is slow in its course, finally causes atrophic changes, and has the characteristic seborrheal scales with plugs upon their under surfaces. Baldness from actual destruction of hair-bearing tissue should not be mistaken for alopecia areata. Whether caused by a burn, or by an ulcerative process such as syphilis, its permanence and the presence of cicatricial tissue will serve to differentiate it from the affection under consideration. The general defluvium capillorum that occurs in the early stages of syphilis may be mistaken for an aggravated alopecia areata; but there are never any circles, there is a characteristic "moth-eaten" look to the affected surfaces, and the history and the presence of other syphilitic symptoms will elucidate the diagnosis. Alopecia of the senile and the premature forms is preceded by grayness and is slow of onset; it does not appear in circles; it begins at the vertex or on the temples, and gradually spreads; it is usually preceded by a seborrhea; and it takes years for complete baldness to be effected.

Prognosis.—Alopecia areata tends to spontaneous recovery, especially in the young; but it takes a long time to run its course, most cases lasting from six months to two years. In older individuals recovery often does not take place. The more numerous the patches, and the quicker their spread, the worse the prognosis. Malignant cases, with general diffuse alopecia of the whole body, are usually of bad prognosis.

Treatment.—Though internal remedies have little or no effect upon the disease itself, they are of importance for the general health, which undoubtedly influences

the malady. Tonics, fresh air, exercise, baths, especially of salt water, are important agents in the treatment of alopecia areata; so also are cod-liver oil, iron, phosphorus, arsenic, and quinine. Hypodermatic injections of the muriate of pilocarpine, $\frac{1}{8}$ to $\frac{1}{10}$ grain every five to six days, have been reported to have a very beneficial effect upon the disease. The malady tends to spontaneous recovery, but we can do much by these means to hasten its course.

No. 152. Croton-oil Ointment.

R̄ Ol. tigllii 2 parts
Cer. alb.
Ol. theobrom. āā. 1 part

No. 153. Bulkley's Carbolic-Iodine Application.

R̄ Ac. carbolic
Chloral.
Iodinii āā. p. e.

No. 154. Jessner's Carbolic-Sulphur Ointment.

R̄ Acid. carbol.
Ol. bergam. āā. 1 part
Sulphur. sublim. 5 parts
Adip. benzoat 50 "

The local treatment consists, as in the other forms of alopecia, in the stimulation of the nutrition of the scalp; and any of the stimulating applications recommended on p. 303 is appropriate. The epilation of the loose hairs at the margins of the patch with the fingers is advisable in most cases. Static electricity has done well, in the hands of G. H. Fox, in stimulating the new growth of hair. The local stimulation must be quite vigorous; the skin stands it very well in these cases. A favorite method is to blister the skin of the affected areas with croton-oil or cantharidal collodion, dressing afterward with olive-oil. A croton-oil ointment (No. 152, p. 307) may be rubbed in in small quantity every five or six days; twelve to twenty-four hours after the application the inflammatory reaction appears. Bulkley recommends a carbolic-acid and iodine application (No. 153, p. 307) which may be applied every other day; Jessner's carbolic-sulphur ointment (No. 154, p. 307) may be used daily. Acetic acid may be painted over the part till the skin whitens, and then sponged off with water; or the stronger water of ammonia may be applied daily to the patches for weeks. The various corrosive-sublimate lotions (No. 148, p. 303, etc.) may be used, and Lassar recommends his process for the treatment of alopecia furfuracea (p. 304). I have found the use of chrysarobin ointment (No. 8, p. 46, No. 40, p. 94) a very satisfactory method, more especially when preceded by vigorous friction with the tincture of green soap (No. 5, p. 43). Our efforts must be directed to effecting the greatest possible amount of stimulation that the skin will bear, the special means employed for that purpose being comparatively unimportant.

ATROPHIA PILORUM

Defective nutrition of the hairs may cause atrophic changes of various kinds in these structures. They consist essentially in a diminution of the size of the pilous

structures, with consequent fracture. We shall consider briefly the conditions known as aplasia pilorum propria, fragilitas crinium, and trichorrhexis nodosa.

1. Aplasia pilorum, monilethrix, pili annulati, moniliform or beaded hairs, *Ringelhaare* (Ger.), *cheveux moniliformes* (Fr.), is a rare condition in which the shaft of the hair is not of uniform size, but consists of a succession of thicker dark and thinner lighter-colored portions. The thicker portions are normal shaft; the thinner ones, one third their size, occur at regular intervals along the entire shaft and contain neither medulla nor pigment. The hair-bulbs are usually atrophied. Fracture of the hair occurs, probably from slight mechanical causes, at the thinned internodal parts, and the fractured ends may be smooth, or frayed-out and brush-like. The affection usually begins in early infancy, and may go on to complete baldness; it is frequently inherited, and is to be looked upon rather as a deformity than as a disease. All the hairy regions of the body may be affected. Its cause is unknown. Treatment is of little value, though occasional cases go on spontaneously to partial recovery.

2. Fragilitas crinium, scissura pilorum. Here the hair becomes dry and splits either at its end or in its course. It occurs as a symptom in the parasitic diseases of the hairy portions of the body, trichophytosis and favus, and occasionally also in dry seborrhea and eczema. After various fevers and cachexiæ also the hair loses its luster and becomes fragile. It is seen as an idiopathic affection from causes, as yet unknown, that interfere with the nutrition of the hair. The hair becomes dry, brittle, and dull; and the splitting into two or more filaments may begin at its end and run part or all the way to the root, or it may commence at any portion of the shaft. The split hairs show a marked tendency to curl up. The affection occurs most frequently in the scalp, especially in women, and next most frequently in the beard. Only a few scattered hairs or a large number may be affected. It is not associated with any general affection or any local disease of the scalp. The microscope shows the hair-bulb either normal or atrophied, and the medulla of the shaft more or less broken up; but there is no other recognizable change. Treatment consists in attention to the hygiene of the scalp, more especially by the free use of the comb and brush. The split hairs should be cut above the cleft.

3. Trichorrhexis nodosa or nodositas crinium. Here there occur peculiar nodose swellings, involving the entire circumference of the hair at irregular intervals along the shafts, and of a transparent and shining grayish hue. When they occur in red hair their color is said to be black. From one to five are usually present on a single hair, most commonly at its distal end. The hairs themselves are brittle, and prone to fracture at the nodes, leaving a brush-like mass of filaments projecting from the free end of the structure. The hair is firmly seated in its follicle, and the bulbs are apparently normal, as also are the internodal parts of the shaft. The etiology of the disease is obscure; no parasite has been found. The affection occurs almost exclusively in the male beard. The most hopeful treatment consists in shaving, and

the use of the various stimulating applications to the skin from which the hairs grow (Nos. 144, 148, 149, p. 303, No. 154, p. 307).

4. ATROPHY OF THE NAILS.

Atrophy of the entire structure of the nail or of a portion of it occasionally occurs. We shall consider atrophía and leucoma unguium.

ATROPHIA UNGUIS.

Onychatrophia, atrophía unguis, or general atrophy of the nail occurs as a congenital or as an acquired condition. In the congenital cases the digits are usually poorly developed, the nails themselves being distorted, rudimentary, or absent. The hair also is generally defective. The acquired cases arise from traumata, as on the feet from the pressure of improperly fitting boots and shoes, and on the fingers from injuries of common occurrence in the various trades. They also occur from the action of heat and cold; from chemicals, as with druggists and photographers; from inflammatory affections of the nail-bed, onychia and paronychia; in the course of various internal diseases, tuberculosis, syphilis, peripheral nerve lesions, etc., and after surgical accidents; and as a part of many affections of the general integument, psoriasis, eczema, parasitic diseases, etc. The nails lose their luster; they may become expanded, thinned, and curved, but more frequently they are abnormally brittle, and become thickened, split, and furrowed in various directions. They may finally fall out. Both the prognosis and the treatment depend upon the cause of the atrophy. The only local measure required is the protection of the fragile nails by means of leather stalls or rubber finger-tips.

Leucoma unguium appears not infrequently in perfectly healthy persons, but occurs also after the various fevers, nervous affections, etc. White spots or stripes occur in the otherwise normal nail, and grow outward with it. They are supposed by some to be due to an infiltration of air in the epithelial cells, similar to that which occurs in the hair in canities. By others they are thought to be due to a tropho-neurosis which causes nutritive changes in the matrix. There is no treatment for the affection.

COSMETICS OF THE SKIN AND HAIR.

The cosmetic care of the skin and its appendages has usually received but scant attention ; yet the subject is of importance, especially to the female half of our patients. Its real basis is hygiene ; and the health of so important and vital an organ as the skin is a matter of just concern, and one about which the practitioner is frequently consulted. The subject includes the proper methods of cleansing and caring for the skin, and the means to be employed for that purpose ; the remedying of such defects as excessive roughness and dryness, superfluous moisture and oiliness, undesirability of hue and abnormal colorations or discoloration, unusual size, form, color, quantity, or implantation of the hair and nails ; and, in fact, the prevention and treatment of a number of conditions not sufficiently marked to be recorded and treated as diseases. Various means are at our disposal for these purposes, which may be classified as cleansing agents, stimulating or soothing agents, coloring or discoloring agents, and agents for the removal of other abnormalities.

I. CLEANSING AGENTS.

The first and most important requisite for the health and beauty of the skin and its appendages is cleanliness, in spite of the fact that a direct connection between uncleanness and dermal abnormalities and diseases can sometimes not be recognized. The regular removal of dirt, dust, dried sebum and sweat, and desquamated epithelium is necessary for that proper nutrition, good circulation, and normal performance of function of the organ which is essential to its proper appearance. The chief agent for this purpose is of course water ; and its importance is such that the amount in which it is used may almost be taken as the index of civilization of an individual or a people. In many cases it is undoubtedly insufficiently employed, and we have certainly retrograded in some respects from the ablutionary habits of the classical nations. The considerable prejudice that still remains against its employment in an amount and with a frequency sufficient to be fully effective has some basis in the facts that not all forms of the fluid are suitable for every person, and that in some abnormal conditions of the integument its influence is distinctly harmful.

For cleansing purposes water should be employed warm. Hot water is only exceptionally necessary when especially vigorous action is desired ; its continuous use is relaxing and enervating, and renders the skin abnormally sensitive to external influences. Hot steam or air, as gotten in the Russian or Turkish baths, are rather to be classed as therapeutic than as hygienic and cosmetic agents, though a cleansing bath is usually conjoined with their use, and the cold douche or plunge with which they usually end counteracts their undesirable relaxing effects. Absolutely cold water is a stimulant, and falls in the same category.

The entire surface of the body should be bathed for from five to ten minutes, or washed, several times a week, if not daily. For whilst the covered portions of the body are not so subject as the exposed ones to contaminations from the atmosphere and adventitious agents, evaporation and the removal of excrementitious matter is much less free, and all material, fluid and solid, which should normally be cast off from the skin remains upon the surface or is kept in close apposition to it by the underclothing. Water dissolves and removes the salts, part of the fatty acids, the dead epithelium, and much foreign matter ; and by doing so is the most important single means that we possess for securing a proper nutrition and a healthy and desirable appearance of the general integument.

An occasional disadvantage of water is dependent upon the fact that it may be too hard from the presence of calcium and magnesium salts, and so make the skin rough and coarse. If a soft water is not obtainable, the ordinary variety may be made suitable by prolonged boiling, or by the addition of a small amount of soap, or of soda or potash. Of more importance, however, is the damage that is sometimes done by water on account of its faculty of causing swelling of the epidermic cells by imbibition, which in certain cases may be so marked as to render the skin raw and fissured. The greater the length of time during which water acts upon the skin the more marked do these undesirable effects become in certain cases ; and they may be produced even in insusceptible skins by very long-continued action. Hence prolonged baths are not to be recommended as a rule, and thorough drying is essential to prevent as far as possible these undesirable effects. Vigorous friction with a rough towel not only takes up and removes the last traces of superficial moisture, but mechanically removes detritus which has been softened but not carried away, and stimulates the circulation in the cutaneous organ. In certain diseased conditions, more especially of the inflammatory types, water of any kind has an irritant effect ; yet even here the addition of a little bran to the fluid will render it milder in effect. Washing should be avoided in these cases as much as possible, of course ; but even an eczematous skin need not be left dirty, and should not be. The cleansing should mostly be done with a bland oil ; the ordinary olive or table oil of good quality is usually the most convenient to use. But once every few days, or even daily, the part should be well washed with water and a mild soap, care

being taken to dry the part thoroughly and apply an oily material thoroughly immediately thereafter.

An excellent method of applying water for cleansing purposes is by means of a sponge, provided that this latter is soft, clean, and new. Unfortunately sponge rapidly become greasy and is difficult to cleanse ; its interstices become filled with detritus and decomposable material ; and no more unsuitable cleanser can be found than a sponge that has been some time in use and has been neglected, more especially if the skin to which it is applied has any tendency to disease. The loofa, the sponge-like dried interior of the fruit of the *Loofa Ægyptica*, is to be preferred for use upon the general surface of the body. The woody fiber absorbs water readily, and becomes soft ; and it is easier to cleanse and less liable to harbor contaminating elements than the sponges usually employed.

Water is not in itself injurious to the hair, the wide-spread prejudice to the contrary, especially among females, notwithstanding. The normal amount of fat upon the cutaneous surface is doubly necessary upon the hair ; without it the pilous structures become dry, lustreless, and brittle, and suffer greatly in appearance. This is due, however, not to the water but to the soap, often of a markedly alkaline kind, which is employed in conjunction with it, and to the non-replacement of the oily material that is abstracted from the scalp and hair. It is safe to say that water of the proper kind does not rot the hair or affect the scalp injuriously, and that any possible evil effects of the soap employed in conjunction with it can be avoided by the judicious use of a bland, oily, or fatty material on the scalp immediately after the cleansing. Owing to the very imperfect head-covering universally worn by women, their scalps and hair are exposed to every noxious influence ; and no more suitable breeding-ground for living infectious material can be imagined. Cleansing should be correspondingly frequent ; a thorough weekly washing is none too much, and will have no ill effect if the precaution mentioned above is employed.

Brushing and combing are important cleansing agents for the hairy portions of the body, though they can only be regarded as adjuncts to washing, which they cannot replace. An important point, and one but too frequently neglected, is the proper care of the instruments employed for these purposes. This is more especially the case since the recognition of the fact that one of the commonest causes of baldness is a seborrhœa of infective nature, the etiological factor of which is probably transmitted through the medium of the hair-brush. These implements should be thoroughly cleansed with hot water, soap, and an alkali at frequent intervals, followed by a bichloride or other disinfection and exposure to the sun and air.

For the more energetic detergent effect upon the skin which is desirable in almost all cases, soap must be employed in addition to water in cleansing. Its therapeutic action has already been discussed (p. 44). Soap softens, swells, and dissolves the epidermic scales, saponifies and renders soluble the fatty materials,

and promotes the removal of foreign matter. Its action is therefore chemical as well as mechanical. It is essentially a combination of fatty acids with alkalies; and in accordance with the employment of soda or potash we have the hard and soft varieties of the substance. Different proportions of fat give us the neutral and the superfatted soaps; and the addition of various drugs give us the medicated kinds.

For ordinary cleansing a pure neutral soap is the best; and the unscented varieties are usually preferable, since the odorous materials are but too frequently added to conceal imperfections in the body of the article. A good toilet soap should be neutral in reaction, since an excess of alkali is irritant; it should foam readily, showing that the proportion of water and of free fat is not too great; and it should leave the skin soft and flexible.

More strongly alkaline soaps, more especially of the potash varieties, are better cleansers, since they cause greater swelling and solution of the superficial epidermic scales, and remove all fatty matter with greater freedom than neutral soaps. They are therefore necessarily more irritant; and whilst they must be employed when there is much dirt or detritus present upon the skin, or when larger collections of crusts or dead epidermis are to be removed, their use cannot generally be recommended, and they are very apt to occasion excessive dryness, harshness, roughness, and even fissuring of the skin. Green soap, either pure or in the form of Hebra's tincture (No. 5, p. 43), is the best known representative of the class, and may be employed to advantage occasionally on thick greasy skins with a marked tendency to acne. Even here, however, it is too irritant to be used regularly; it must be employed only from time to time, and a bland neutral preparation used in the intervals. A still greater detergent action can be gotten by the employment of soaps containing sand, or finely powdered pumice-stone, or marble-dust, of which several excellent kinds are now on the market. Here the mechanical action of the insoluble elements comes into play, and the preparations are to be employed upon skins that are hard, thick, badly stained, or affected with indurated acne. From their mechanically detergent effects such soaps are very effective as a part of the surgical disinfection of the hands and other parts.

The superfatted soaps, on the other hand, are valuable in cases where a mild alkaline or even a neutral soap is irritant; where the skin is dry and fatless, and where conditions of asteatorrhea, keratosis, and ichthyosis prevail. Unna has given a formula for a soda soap of this description (No. 155, p. 314), in which four parts of the fat remain unsaponified, and which is very valuable. The excess of fat leaves the alkali but little room for action. All soaps of this class, however, have the disadvantages of being unattractive in odor and appearance, and of not keeping well; for the fat readily becomes rancid.

Occasionally we meet with skin which will not tolerate even the mildest soaps,

more especially upon the face ; though such instances are rarer than is usually supposed, and the use of an improper variety of the article is usually the reason for the supposed intolerance. Here the pure fats and oils must be employed for cleansing purposes ; at the same time they tend to render the skin smooth, soft, and pliable, and improve its nutrition. Milk is a favorite agent in these cases, or olive-, benne-, or almond-oil may be employed. They are best applied by means of large pledgets of cotton, since cloths and sponges rapidly become foul and contaminated when used for this purpose. A much more thorough cleansing than is usually supposed possible can be effected, more especially if the milk or oil is employed warm and sufficient friction is applied. Adeps lanæ or lanolin is perhaps still better than the agents mentioned above, more especially in the form of an emulsion (No. 156, p. 314). All these fatty agents are contraindicated in greasy seborrheal skins showing an abundance of comedoes. Here glycerin may be substituted for soap as the cleansing agent, as in the paste recommended by Hager (No. 157, p. 314).

No. 155. *Sapo Superadiposus.*

| | |
|--------------------------------|------------|
| ℞ Beef tallow | 59.3 parts |
| Olive oil | 7.4 " |
| Potash lye (28° Baumé) | 11.1 " |

No. 156. *Lanolin Emulsion.*

| | |
|------------------------|------------|
| ℞ Adeps lanæ | 19 parts |
| Borax | 1 part |
| Aq. rosæ | 1000 parts |

No. 157. *Hager's Glycerin Paste.*

| | |
|------------------------------|----------|
| ℞ Pulv. tragacanth | 30 parts |
| Aq. rosæ | 70 " |
| Glycerini | 125 " |
| Tinct. benzoini | 30 " |
| Ol. aurant. flor. | 1 part |

No. 158. *Toilet Water.*

| | |
|---------------------------|---------|
| ℞ Boracis | 1 part |
| Aq. rosæ | 5 parts |
| Aq. Coloniensis | 10 " |
| Aq. distil. | 110 " |

Alcohol greatly diluted, or bay-rum or cologne water in strengths of 5 to 10 per cent., as found in the better class of toilet-waters, are excellent cleansing agents, dissolving and removing much of the foreign matter that may be present upon the skin. As these waters, however, are very liable to contain ingredients which are harmful to the skin, they had better be prescribed. No. 158, p. 314, is a useful formula. The addition of a little borax increases the detergent effect, and it is often advantageous to add a small amount of an oil soluble in alcohol to the mixture to prevent a too great drying of the skin (No. 159, p. 315).

Alkalies are usually employed in the form of one of the alkaline soaps mentioned above, but they may be used as washes, and they form the basis of many of the proprietary articles recommended for cosmetic purposes. Caution must be used in their employment, since many of them tend to render the skin dry and rough and the hair brittle. Borax is one of the best and is harmless, and may be employed even in concentrated solution anywhere. Formulæ Nos. 160 and 161, p. 315, or the plain alkaline lotion, No. 67, p. 135, may be used. When a still stronger alka-

line effect is desired a little of the Detergent Solution (No. 162, p. 315) may be added to the wash-water.

Acids are usually found in the form of the toilet vinegars, which are especially useful to remedy excessive secretion or abnormal decomposition of the sweat, and to keep parts so affected pure and sweet. Among the most useful of these are the Cologne Vinegar (No. 163, p. 316) and the Aromatic Vinegar (No. 164, p. 316), to be employed diluted. Boric acid is efficient and harmless, and can be used whenever an application of this nature is indicated.

No. 159. Face Lotion.

| | |
|------------------------|---------|
| ℞ Ol. ricin | 1 part |
| Tinct. benzoin | 2 parts |
| Spts. Colonien. . . . | 8 " |
| Spts. vini | 25 " |

No. 160. Borax Lotion No. 1.

| | |
|----------------------|---------|
| ℞ Sod. carb. | 1 part |
| Boraci | 5 parts |
| Aq. rosæ | 200 " |

No. 161. Borax Lotion No. 2.

| | |
|------------------------|---------|
| ℞ Kali carbon. | 5 parts |
| Boracis | 10 " |
| Aq. Colonien. | 40 " |
| Aq. rosæ | 80 " |

No. 162. Detergent Solution.

| | |
|----------------------------|---------|
| ℞ Potassii carbon. | 1 part |
| Tinct. benzoini | 6 parts |
| Aq. rosæ | 7 " |

2. STIMULATING AGENTS.

These are not very frequently employed for purely cosmetic purposes, save on the scalp, though they are useful when the skin is pale and anæmic, and when deficient muscular action seems to be the cause of glandular congestion and the various lesions of acne and comedo. Chief among them are massage and friction, both of which are best done in conjunction with some bland oil. Pure almond-, benne-, or olive-oil is usually to be preferred; but the various cold creams may be employed, or one of the lanolin preparations (Nos. 165, p. 316, 156, p. 314) may be used. A soap is sometimes preferable. Cold or hot water alone, or an alcoholic lotion (No. 159, p. 315) or soap essence (No. 166, p. 316), may be used. Very eligible for this purpose also is the green-soap tincture (No. 45, p. 43), though it must be employed well diluted to prevent undue irritation. The combination of a mild alkali with glycerin is often a desirable preparation to employ for frictions and massage; a good formula is the borax-soap spirit (No. 167, p. 316).

Stimulant applications are commonly employed upon the scalp, and sometimes upon the bearded portions of the face when the pilous growth is deficient. Baldness, especially in its slighter forms, is certainly increasing in frequency in males; and it is commoner in females than is generally supposed, though usually more successfully hidden from sight. We need not inquire whether the wide-spread

contagious seborrhea, which is the commonest form of dandruff and which is communicated mostly through the barber-shops, or the prevalent custom of wearing hats that encircle the head with a tight rim and thus interfere with the circulation of the scalp for large portions of the day, is the cause of the increasing tendency to the early development of alopecia. Undoubtedly, however, the general disuse of the oily applications that formed an essential part of the hair toilet of our ancestors is responsible to some degree, at all events, for the deficient nutrition, imperfect growth, and early decay of the pilous structures.

No. 163. Cologne Vinegar.

℞ Acid. acet. conc. 1 part
Aq. Colonien. 30 parts

No. 164. Aromatic Vinegar.

℞ Tinct. rosmarin. 1 part
Tinct. caryophyl. 1 "
Tinct. lavandulæ 2 parts
Camphoræ 180 "
Acid. acet. conc. 1000 "

No. 165. Massage Ointment.

℞ Adeps lanæ
Ol. theobromæ
Ol. amygdal. dulc. āā. 1 part

No. 166. Soap Essence.

℞ Sapon. alb.
Aq. rosæ
Aq. naphæ āā. 1 part
Spts. vini rect. 4 parts

Under the headings of seborrhea (p. 64) and alopecia (p. 301) will be found the general directions for the treatment of these conditions. The various sulphur and resorcin applications (Nos. 20, 24, and 25, p. 64), and the antiseptic and stimulant lotions (Nos. 142, 144, 145, 149, etc., p. 303), are often useful when deficient hairy growth is to be stimulated. The long-continued employment of the stronger ones among them, however, is not advisable, since they may render the hairs brittle, and even alter it in texture and color. This is especially the case with those containing alcohol and alkalies.

No. 167. Borax Soap Spirit.

℞ Boracis 1 part
Spirit. vini rect. 50 parts
Glycerin
Sapon. kalin. āā. 100 "

No. 168. Bichloride Hair Wash.

℞ Hydrarg. bichloridi 1 part
Glycerini 100 parts
Spirit. colon.
Spirit. myrciæ āā. 1500 "

No. 169. Quinine Spirit.

℞ Ol. sabinæ 1 part
Tinct. quinae 50 parts
Spirit. vini Gall 100 "

No. 170. Stimulant Hair Wash.

℞ Tinct. cantharid. 1 part
Tinct. gallar. 5 parts
Aq. Colonien. 50 "

As a general stimulant to the scalp and hair there is no more generally useful application than the bichloride wash (No. 168, p. 316) or the quinine spirit. Cantharides is also commonly employed, as in the stimulant hair wash (No. 170,

p. 316). It is of importance, however, to use an oily application after these irritant and desiccating preparations, and for that purpose nothing is better than the ointment or oil given under formulæ Nos. 171 and 172, p. 317.

No. 171. Stimulant Hair Ointment.

℞ Balsam. Peruv. 1 part
Ungt. simplic., s. petrolati . . . 50 parts

No. 172. Stimulant Hair Oil.

℞ Acid. tannic. 1 part
Ol. amygdal. 10 parts
Spirit. vini rect. q. s. ad solut.

3. SOOTHING AGENTS.

These are required when the skin is roughened, irritated, and hyperæmic, and shows a tendency to undergo inflammatory reaction under the influence of slight external irritants. The most important of them are the various fats and oils, the use of which renders the skin supple, smooth, clean, and glossy, makes it less susceptible to atmospheric and other noxious influences, and undoubtedly improves its nutrition and appearance when properly employed. The general use of fats for inunction, especially after the bath, was common in the ancient world ; and it would undoubtedly be of benefit if it were still employed for that purpose.

Lard is the commonest fat that is employed for inunction purposes ; but it has various disadvantages even when combined with benzoin and other preservatives. Like tallow and beef marrow, it is very prone to turn rancid ; and its peculiar odor, even when corrected by the addition of an essential oil, is very evident when it is employed in considerable quantity and over a large surface of the body. One of the various bland ointments (Nos. 26, p. 70, 68, 69, p. 135), or the glycerin cream (No. 173, p. 317), or the adeps lanæ cream (No. 174, p. 317) is preferable to the pure fats.

No. 173. Glycerin Cream.

℞ Cetaceum 13 parts
Glycerini
Aq. rosæ 20 "
Paraffin 10 "
Ol. amygdal. 50 "
Ol. rosæ q. s.

No. 174. Adeps Lanæ Cream No. 1.

℞ Tinct. benzoin 1 part
Petrolati 10 parts
Adip. lanæ 20 "

No. 175. Inunction Oil.

℞ Ol. amygdal. 1 part
Ol. olivæ 5 parts
Ol. odorat. q. s.

No. 176. Adeps Lanæ Cream No. 2.

℞ Adip. lan. 5 parts
Vaselini 10 "
Aq. calcis 20-60 "

Better still are the fluid oils, especially olive and almond, which are best employed both for general inunction and local soothing in mixtures suitably flavored and scented (No. 175, p. 317). Lanolin, though not a true fat, acts upon the skin

in a similar manner, and may be used as the adeps lanæ cream No. 1 (No. 176, p. 317) or the lanolin cream (No. 177, p. 318). It is sometimes desirable to employ the fat in more solid form; in which case Bernatzik's crystal pomade (No. 178, p. 318) is eligible.

No. 177. Lanolin Cream.

| | |
|----------------------|---------|
| ℞ Lanolin | 3 parts |
| Ol. amygdal. | 1 part |
| Vanillin | q. s. |

No. 178. Bernatzik's Crystal Pomade.

| | |
|----------------------|----------|
| ℞ Cetacei | 12 parts |
| Ol. ricini | 64 " |
| Ol. amygdal. | 20 " |
| Ol. odorat. | 1 part |

No. 179. White Face Powder.

| | |
|-------------------------|---------|
| ℞ Magnes. carb. | 1 part |
| Zinci oxidi | 7 parts |
| Talc. venet. | 12 " |
| Ol. millifi. | q. s. |

No. 180. Almond-meal Powder.

| | |
|---------------------------------|-----------|
| ℞ Farin. amygd. decort. | 60 parts |
| Rad. irid. pulv. | 5 " |
| Ess. citri | |
| Ess. amygdal. | aa. q. s. |

The various powders, of which those composed of starch, talcum, and the carbonate of magnesia are the best, may be applied as soothing and cooling applications to the skin, and are largely used in summer for that purpose. The zinc dusting powder (No. 18, p. 61) can be employed, being but very slightly astringent, as also can the white face powder (No. 179, p. 318) and the almond-meal powder (No. 180, p. 318).

No. 181. Glycerin Cold Cream.

| | |
|---------------------|------------|
| ℞ Amyli | |
| Aq. rosæ | aa. 1 part |
| Glycerini | 25 parts |
| Ol. rosæ | q. s. |

No. 182. Debay's Pomade.

| | |
|----------------------------|---------|
| ℞ Tinct. benzoin | 1 part |
| Bals. Peruv. | 2 parts |
| Ol. amygdal. dulc. | 4 " |
| Axung. | 50 " |

No. 183. Rose Pomade.

| | |
|------------------------------|----------|
| ℞ Ol. rosæ | 1 part |
| Ol. amygdal. dulc. | 30 parts |
| Medull. oss. bovis | 150 " |

No. 184. Brilliantine.

| | |
|-------------------------------|----------|
| ℞ Ol. æth. flor. aur. | 1 part |
| Ol. ricini | 30 parts |
| Spirit. vini rect. | 350 " |

No. 185. Hair Oil.

| | |
|------------------------------|----------|
| ℞ Ol. amygdal. amar. | 1 part |
| Ol. flor. aurant. | 30 parts |
| Ol. jasmin. | 60 " |
| Ol. amygdal. dulc. | 350 " |

Glycerin in proper dilution is very valuable for soothing purposes, though it does not agree with all skins. It may be employed in the form of the glycerin cream (No. 173, p. 316) or the glycerin cold cream (No. 181, p. 318).

The various pomades and hair oils may be considered here, though many of them are stimulating rather than soothing agents, and tend to increase the growth

of the hair. They are made of various mixtures of solid and fluid fats, to which coloring and odorous materials are usually added. Their use in moderation is to be advocated, more especially since a proper employment of soap and water to the scalp for cleansing removes the natural fat more rapidly than it is reproduced.

Lard is the usual basis of these applications, and is apparently just as good as the marrow or bear's fat that was formerly employed. Vegetable oils are employed to make the hair oils; and the addition of wax, spermaceti, etc., gives us the solid stick varieties. Nos. 182 (p. 318), 183 (p. 318), 184 (p. 318) are suitable formulæ of solid and fluid preparations of this kind.

4. COLORING AGENTS.

These are occasionally required to hide excessive pallor, sallowness, darkness, or redness of the complexion, in cases of jaundice, to conceal the local discolorations of leucoderma, or the local pigmentations of ephelides, chloasmata or nævi, or to improve the hair. In a general way their use is objectionable, and some of the agents employed are injurious to the skin. But they are sometimes necessary, and are used to a greater extent than is generally supposed; hence they require some consideration here.

White face powder is commonly employed to some extent by females, more especially in the hot weather; and here, if of the proper kind, it does have the good effect of cooling and soothing the skin, drying off the superabundant moisture, and preventing the disagreeable oiliness to which the brunette complexion especially is so liable at that time. A pure powder of rice, talcum, or carbonate of magnesia is perfectly harmless; unfortunately many of the commercial preparations contain mineral ingredients of which that cannot be said. All such as contain lead or bismuth should be rejected, though a small amount of zinc oxide does no harm and improves the covering properties of the preparation. Perhaps a simple mixture of starch and talcum (No. 186, p. 320) or the magnesia powder (No. 187, p. 320) is the best.

A flesh tint can be imparted to either of these powders by the addition of a very little carmine, or No. 188, p. 320, can be used. As a rule, however, coloration of this kind is better done with one of the fluid or ointment preparations mentioned below.

Fluid coloring agents are sometimes employed, the princess water (No. 189, p. 320), among others, enjoying a considerable vogue. It is to be applied with a brush after shaking, and the sediment thoroughly rubbed into the skin with a cloth. Carmine may also be applied in this form, a little rubbed up in glycerin being applied to the part.

White salve preparations are rarely employed; and the ointment form is the

most eligible one for the red coloration. Either of the pink pigments (No. 190, p. 320, 191, p. 320) may be used, being applied by means of a cloth.

Dyes for coloring the hair are sometimes required in cases of premature or senile blanching, and they will always be used to some extent by females in accordance with the dictates of caprice or fashion. Several formulæ for the preparation of black and brown hair dyes, together with details of the method, will be found under the heading of canities (Nos. 135 to 141, p. 297). The vegetable dyes are the most harmless. A serviceable though temporary dye can be made from the fresh juice of unripe walnuts, giving a dark brown color; and henna, obtained from the leaves of the *Lawsonia inermis*, gives a reddish dye which can be made darker by the subsequent employment of alkalies, and removed by means of acids. Neither of these substances is much used nowadays, however, to darken the hair, pyrogallo being the only agent of organic nature employed (Nos. 135 and 141, p. 297).

No. 186. Face Powder.

℞ Amyli trit.
Halc. venet. aa. p. e.

No. 187. Magnesia Face Powder.

℞ Magnes. carb. 1 part
Zinci oxidi 5 parts
Talc. venet. 12 "
Ol. millifl. q. s.

No. 188. Carmine Face Powder.

℞ Carmine opt. 1 part
Talc. venet. 100 parts

No. 189. Princess Water.

℞ Cerussa 5 parts
Talc. præcip.
Magnes. carb. aa. 3 "
Tinct. benzoin 1 part
Aq. rosæ
Aq. Colonien. aa. 75 parts

No. 190. Pink Pigment No. 1.

℞ Carmine 1 part
Spermaceti 5 parts
Talc. venet. 100 "

No. 191. Pink Pigment No. 2.

℞ Carmine 1 part
Ungt. simplic. 100 parts

The inorganic or mineral dyes are more commonly used, as the nitrate of silver and the bichloride of mercury in formulæ 136, 137, 139, 140, p. 297. The hair both of the head and the beard should be thoroughly washed before applying any of these preparations, since fatty substances containing sulphur are liable to change the inorganic and mineral materials employed. The dye itself should be applied by means of a tooth-brush, entire strands from their roots to tips being separately treated, and the surrounding skin and the fingers being protected by means of rubber coverings or coating the surface with glycerin or oil.

To produce the lighter blond tints in the hair peroxide of hydrogen is the material usually employed. It should always be used fresh and with caution; the tint depending upon the amount employed and upon its concentration.

Any one of these dyestuffs must be reapplied at regular intervals, dependent upon the rate of growth of the hair. None of them penetrate below the level of the skin, so that it is not possible to dye the part of the hair shaft which will rise above the surface during the days following the application. The scalp hair needs redyeing every two or three weeks; that of the beard and mustache, which grows more rapidly, every eight or ten days.

A word of caution as to the employment of these various hair dyes is not out of place. Many of them, more especially the mineral varieties, have an injurious effect upon the pilous structures; their continued employment renders the hair dry and brittle, and apparently effects a chemical change in the shaft itself. Unless great care is taken in making the applications, unexpected and undesired color effects are sometimes obtained. Some of them stain the skin as well as the hair. Over and above all these results, however, they sometimes exert a directly irritant effect upon the skin of parts even remote from the site of application. Erythematous, papular, and pustular dermatites affecting the scalp and the whole face have been noted; and in Paris during the past year (1901) have been sufficiently frequent to lead to official notice and condemnation of the materials employed in some of the commercial dyes.

5. DECOLORING AGENTS.

But few of these come under the heading of articles for ordinary cosmetic use; if the abnormal coloration cannot be hidden by the ordinary powders and salve recommended above (Nos. 186, 187, p. 320, etc.), the chloasmata, lentiginēs, and pigmentary nœvi that are their cause are objects for the medicinal treatment which is detailed under the headings of these affections. The peroxide of hydrogen in 10 to 20 per cent solution is perhaps the safest bleaching agent for domestic use.

6. AGENTS FOR THE REMOVAL OF OTHER ABNORMALITIES.

The removal of nœvi, verrucæ, callosities, etc., belong to the medicinal rather than to the cosmetic chapter, and have already been dealt with under their appropriate heading. Methods for the radical removal of abnormal hair will be found under hirsuties; there remains only to mention the depilatories, the use of which is sometimes advisable, more especially in females.

Palliative treatment of hirsuties is sometimes necessary in cases where radical treatment by electrolysis (p. 257) is not possible; and depilatory pastes are better for this purpose than the razor, since they are easier of employment, need not be used so often, and remove the hair to a considerably greater depth than does mere ablation by shaving. The formula for one of the best of these, recommended by

Duhring, will be found on page 257 (No. 130) together with the method of its employment. One of the most ancient is the *Rusma* employed in Oriental harems to destroy pubic and axillary hair (No. 192, p. 322). It is applied by means of a spatula, left in situ for ten minutes until dry, scraped off, and the skin then washed and powdered. Pastes made of the sulphhydrate of calcium or sodium or of barium (Nos. 193, p. 322, 194, p. 322) are to be employed in the same manner; but preparations containing orpiment should not be left on so long, some two to five minutes sufficing (Nos. 196, 197, p. 322, 198, p. 322). Amongst the least irritating of them all is Boettger's depilatory (No. 199, p. 322), which is therefore most suitable for the face and where light lanugo hair is to be removed.

No. 192. *Rusma Depilatory Paste.*

℞ Yellow sulphide of arsenic . . . 1 part
Unslaked lime . . . 10 parts
M. S. Boil.

No. 193. *Redwood's Depilatory.*

℞ Barii sulphurat. solut. concentr. 1 part
Amyli . . . q. s. ut f. pasta

No. 194. *Bouclé's Depilatory.*

℞ Sodii hydr. sulph. . . . 1 part
Calc. caust. pulv. . . .
Amyli aa. 5 parts
To be rubbed into a thin paste with water for use.

No. 195. *Depilatory Powder.*

℞ Sodii sulphid. 1 part
Cretæ præp. 3 parts

No. 196. *Neumann's Depilatory.*

℞ Orpiment 1 part
Amyli 3 parts
Calc. hydrat. 5 "
Aq. calcis q. s. ut f. pasta mollis.

No. 197. *Debay's Depilatory.*

℞ Orpiment 1 part
Pulv. calc. caust. 8 parts
Pulv. irid. 16 "

No. 198. *Depilatory Water.*

℞ Orpiment 1 part
Calc. viv. 2 parts
Coque c.
Liq. potas. caust. 32 "

No. 199. *Boettger's Depilatory.*

℞ Essent. citr. 1 part
Amyli
Ungt. glycerini aa. 4 parts
Calc. hydr. sulph. in aqua . . . 38 "

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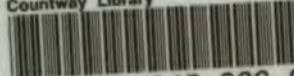
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